PILOT LORE
From Sail to Steam

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PILOT LORE

From Sail to Steam

AND

HISTORICAL SKETCHES OF THE VARIOUS INTERESTS IDENTIFIED WITH THE DEVELOPMENT OF THE WORLD'S GREATEST PORT

1922

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By the United New York and New Jersey
Sandy Hook Pilots Benevolent Associations

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The United New York and New Jersey Sandy Hook Pilots Benevolent Associations

Under the supervision and direction of

EDWARD L. ALLEN

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FOREWORD

IN THE development of New York into the world's greatest port, probably no other group of men has been so continual a part of it, and so near the heart of it, as that always numerically small one, known as the "Sandy Hook Pilots."

Being so intimate a part of it, probably accounts for the fact that members of the craft have, in some way or other, shared in most of the many interesting and tragic events that have marked its growth; events which left indelible imprints on the minds and lives of all who shared their thrills and dangers.

It is upon such events, upon the acts of heroism they prompted, of deep-rooted courage, of noble sacrifice, and of duty's high obligation, that the dearest and most cherished traditions of our craft are founded.

As time passes and memory dims, we feel it a duty as well as a very great pleasure, to honor the men whose lives and acts have honored our craft by perpetuating in printed word a record of their deeds.

And that is the purpose of this little book.

United New York and New Jersey
Sandy Hook Pilots Benevolent Assns.

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Requiescat in Pace

To those of our craft whose lives
have been lost in the pursuit
of our calling it is but
ours to honor in our
humble way and to
beseech the Great
Pilot they may
at last find
safe refuge in
the Port of
Eternal
Peace.

In Memoriam

(New York Pilots)

Henry Budd	Lost from pilot boat Yankee No. 7.	Dec. 3, 1852
Robert Curtis	Lost from pilot boat Yankee No. 7.	Dec. 3, 1852
Robert B. Mitchell	Froze to death when pilot boat E. K. Collins No. 11 went ashore.	Jan. 10, 1856
Thomas Freeborne	Froze to death when bark John Minturn was wrecked on Jersey beach.	Feb. 14, 1856
Thomas Orr	Lost when pilot boat Washington No. 2 went down.	Jan. 18, 1857
John O'Keefe	Lost from pilot boat Westervelt No. 19.	Apl. 20, 1858
John Fredell	Lost when brig Christiania was sunk by steamer North American.	Dec. 27, 1866
James M. Clark	Drowned from bark J. Sargent.	Oct. 29, 1874
Howard van Pelt	Killed when hawser parted, boarding bark Urkaine.	Apl. 22, 1878
Fred Baudier	Drowned from pilot boat Isaac Webb No. 8.	May 17, 1879
Alfred Baudier	Died from heart disease on board steamer Nevada.	Jun. 18, 1879
John Campbell	Lost when pilot boat Ariel Patterson was sunk.	Mar. 5, 1883
Thomas Metcalfe	Lost when steamer Alaska sunk pilot boat Columbia	Dec. 3, 1883
Ralph Noble	Lost when steamer Alaska sunk pilot boat Columbia	Dec. 3, 1883
Christopher Wolfe	Lost when steamer Alaska sunk pilot boat Columbia	Dec. 3, 1883
Charles Arnold	Lost when steamer Alaska sunk pilot boat Columbia	Dec. 3, 1883
Walter A. Reddin	Lost from pilot boat Francis A. Perkins No. 13.	Jan. 24, 1887
John Martino	Lost at sea when pilot boat Enchantress No. 18 went down with all hands in the blizzard	Mar. 13, 1888
John E. Johnson	Lost at sea when pilot boat Enchantress No. 18 went down with all hands in the blizzard	Mar. 13, 1888

In Memoriam

(New York Pilots) *Continued*

Daniel V. Jones	Lost at sea when pilot boat Enchantress No. 18 went down with all hands in the blizzard	Mar. 13, 1888
Henry W. Seguine	Lost at sea when pilot boat Enchantress No. 18 went down with all hands in the blizzard	Mar. 13, 1888
Albert C. Malcomb	Lost from pilot boat Charlotte Webb No. 5	Mar. 18, 1889
John Handran	Lost from pilot boat Bateman No. 11.	Apl. 15, 1889
John L. Canvin	Lost from bark Edward Cushing, being washed overboard.	Jan. 22, 1890
Edward Collins	Lost from pilot boat Washington No. 22, when crushed between tugboat and bark he was boarding.	Mar. 5, 1890
James Smith	Drowned while boarding steamer Van Dyk from pilot boat Edward Cooper No. 20.	Feb. 27, 1892
Henry A. Devere	Lost while boarding steamer Banan from pilot boat Fannie No. 17.	Apl. 13, 1894
William Murphy Thomas Penna Patrick Walsh Francis Kelly George Sampson Walter Berry	Lost at sea when pilot boat Warren No. 5 disappeared and was never heard from again on	Feb. 5, 1895
Gideon Mapes	Died from heart failure on board steamer Cufic.	May 19, 1895
John J. Canvin	Died from heart failure on board steamer Idaho	Sep. 29, 1897
Thomas F. Murphy	Died from heart failure on board steamer Allianca	Sep. 30, 1901
Thomas Shields	Drowned while being taken out to steamer Talisman in a yawl, when yawl was swamped.	Dec. 14, 1907
James Van Pelt	Lost while boarding Standard Oil tank No. 95, having fallen from ladder.	Sep. 19, 1915

In Memoriam

(New Jersey Pilots)

McKnight Smith	Drowned at sea when pilot boat Sylph foundered with all hands during a terrific blizzard.	Winter of 1851
Theopholis Beebe	Died of heart disease on pilot boat Mystery.	Winter of 1866
Joseph Huzzey	Drowned when bark he was piloting was driven ashore at Egg Harbor during a heavy Northeast gale.	Winter of 1873
William Lucy	Drowned while boarding vessel in heavy gale when yawl was thrown against vessel's side and capsized.	Winter of 1875
Thomas Leach	Washed overboard from pilot boat during severe gale.	Winter of 1880
Richard Brown	The man who piloted the America to success in the first International yacht race. Died ashore from the effects of exposure aboard ship in line of duty.	Winter of 1884
William Warner	Washed overboard from pilot boat James Gordon Bennett.	Oct. 16, 1884
Gustave Tenneson	Died of heart failure on board pilot boat David T. Leahy.	Nov. 15, 1897
John Godbey John M. Lennan Harry Mix	Drowned when pilot boat James Gordon Bennett was run into and sunk by the steamship Alene.	August, 1901
Frank Neilson	Died from injuries received when steamship Monterey ran into and sunk pilot boat Hermit.	Nov., 1903
William C. Hall	Died from heart failure on board steamship Muncaster Castle.	January, 1908

THEOPHOLIS BEEBE

One of the first New Jersey pilots. Died of heart disease on pilot boat Mystery in the winter of 1866

HOWARD VAN PELT

Killed when hawser parted boarding bark Ukraine April 22, 1878

GIDEON MAPES.

Died from heart failure on board S. S. Cuba May 19, 1895

JAMES H. VAN PELT

Drowned while boarding Standard Oil tanker September 19, 1915

NEW YORK PILOTS

JANUARY, 1922

ACTIVE

Anderson, Andrew
Akerman, C. B.
Arnold, H.
Anderson, H. C.
Beebe, Geo. W.
Beebe, Franklin B.
Baeszler, A.
Breuer, W. F. C.
Bellmonth, John
Bigley, Jos. A.
Brinkmann, Wm. B.
Berry, J. F.
Bayer, Chas.
Butler, F. A.
Beinert, D. L.
Braun, E., Jr.
Cramer, Geo.
Cannavale, A.
Cramer, Frank
Canvin, Jas. A.
Esquirol, C. M.
Ferrie, Wm.
Fendt, F. W.
Feldhusen, M.
Grant, Wm.
Girdley, A.
Halliday, W. E.
Huus, C. M.
Hauffman, John A.
Ireland, Wm. S.
Johnson, H. C.
Kiernan, J. J.
Keely, Wm. F.
Mitchell, Elvin E.
Murphy, A. H.
Madigan, C. J.
Marks, Thos. H.
Miller, H. A.
McLaughlin, Wm. S.
McCauley, T. J.
Murphy, J. A.
Miller, H. F.
McIntyre, H. A.
Miller, F. W.
Mahlmann, H.
McKernan, A. F.
Nelson, L. C.
Onasch, C. F.
Pratt, J. E.
Peterson, Gustaf
Port, T. J.
Yates, Fras. J.
Peterson, Frank
Peterson, A. H.
Peterson, Robert
Roche, Nicholas
Reiersen, M.
Ronayne, John
Riker, Vincent J.
Roche, A. S.
Stoffreiden, Oscar
Sullivan, Michael
Sullivan, M. Edgar
Shooks, J. H.
Swainson, J. B.
Seeth, Geo. H.
Sullivan, J. W.
Schwarz, L. E.
Swainson, G. F.
Turnure, E. W.
Torgeson, Thos.
Van Pelt, Frank P.
Winters, Ed C.
Waugh, R. J.
Waldie, G. J.
Wood, W. K.
Wood, H. W.
Winters, Ed. C., Jr.

RETIRED

Qualey, W. M.
Akerman, John B.
Braun, Edward
Cochran, J. B.
Dougherty, Thos.
Heath, A. B.
Russell, J. J.
Johnson, A. S.
McDonald, M.
Nicolay, D. S.
Winters, Phil. H.
Parker, Wm.
Scheubner, Chas.
Seeth, Geo.
Stoffreiden, O.
Van Albert, Ivan

NEW JERSEY PILOTS

JANUARY, 1922

ACTIVE

Akerman, John W.
Ashcraft, John A.
Beebe, Allen
Beebe, Alonzo
Beebe, Chas.
Beebe, Howard
Beebe, Jas. D.
Beggs, Samuel C.
Bigley, Richard
Carr, Marcus A.
Clarke, Henry M.
Crocker, Wm. J.
Devereaux, Chas. D.
Devereaux, Wm. S.
Earle, Walter
Egan, Frank T.
Hall, John R.
Hall, John L.
Hall, Warren A.
Hopkins, John F.
Hurrell, Wm. J.
Kissenberth, Geo.
Lowe, Wm. A.
Lowe, Wm. H.
Lennan, Fred B.
Lyons, John A.
Wood, Jos. T.
Melville, Jas. A.
Madigan, Geo. J.
McCarthy, John F.
McCarthy, J. E.
Mitchell, Wm. A.
Oldmixon, Geo.
Oldmixon, Leon E.
Petersen, John
Sloat, Ernest H.
Wall, Frank D.
Warner, Chas. E.
Wells, Jos. S.
Winters, Phil E.

RETIRED

Behrens, Richard
Burrett, Thos. F.
Crocker, Wm.
Lewis, Wm.
Nichols, Edward P.
Shields, Wilmer
Wall, Nicolai A.
Wood, Nathan
Cooper, Stephen H.

PILOT BOAT NELSON

Taking pilot off outbound vessel in the days of the Clipper Ship

THE FIRST PILOT

IT IS a long cry since the day that Usoous, a Phoenician, straddled a log and found that he could safely float over the waters and the present time, when many millions of humans cross the oceans and the seas annually in safety and comfort. The Phoenician legend has it that, long before the foundation of the maritime city of Tyre, prior to 1200 B. C., Usoous cut down a tree, cleared it of its branches, seated himself upon it and "rocked safely upon the waves." Usoous unquestionably was his own pilot and probably cared little whither he went, as long as he was on his way.

Shortly after the venture of Usoous, so runs the legend, one Chrysor combined a number of logs into a raft and was the first man to navigate the waters for trade and fishing. This was, undoubtedly, the birth of maritime commerce but there are no records of any systematic effort to bring the rough craft of those ancient days safely in and out of the primitive harbors and even legendary lore fails to make note of any ancient mariner making it a profession to guard the safety of his fellowmen in and about the treacherous coasts of the pre-historic Phoenician country.

When Semiramis, imperious Queen of Assyria conquered the fleet of Staurabates, 4000 "ships" strong, with her own fleet of 3000 "vessels," along about 1965 B. C., we are at first inclined to believe that Assyria's militant sovereign must surely have had a host of expert pilots to guide her great flotilla against the fleet of Staurabates—until we learn that Semiramis caused her own fleet to be transplanted on the backs of camels from the shores of Syria to the banks of the Indus; and the thought naturally comes up that the entire fleet of the Assyrian monarch could be comfortably stowed away in the capacious holds of one of our modern leviathan cargo carriers.

The very earliest record of a professional pilot comes, aptly enough, from the Netherlands, that little country which, by tradition and history, probably stands second to none in maritime activity and valorous deeds at sea. It is from the Dutch words "*pijl*" and "*lood*" that we get the modern word "pilot." The first Dutch word means pole and, with the Dutch, stands for everything vertically straight. The second word, it may be easily surmised, means "lead." And so we get the early definition, set by the Hollanders, of a lead that is sent down in an absolutely straight line to ascertain the depth of the waters at any given point.

For ages the navigators of the Old World had been familiar with the plumb and sounding line—even though we cannot state, even approximately, the date when the plumb and sounding line's efficacy

was first discovered by a navigator—but it was not until Frans Naerebout, born in Gees, Province of Zeeland, in 1749, announced himself as being a professional "*pijl loods*," ready to take the sailing ships of his day in and out of the harbors of Holland, the depths of which he had studied until he knew the location of every danger spot, that pilotage, as such, became a science and an art.

From that day to this the work of the pilot has been surrounded by a fascinating mysticism so that, even in this blase modern age, the coming aboard or the "dropping" of the pilot remains a feature of a voyage that even the seasoned members of a freight vessel's crew never fail to take the keenest interest in. On a passenger ship the coming or going of the pilot is something of an event with every passenger, even the most experienced ocean traveler.

The Dutch Society for the Promotion of the General Welfare has reared an appreciative memorial over the grave of Frans Naerebout, the original professional pilot, who had been offered a huge salary by the British government to serve under the British flag but who had refused the tempting bait and remained loyal to his own beloved tri-color until his peaceful end in 1818.

Our own piloting history dates back from the time of Hendrik Hudson, who undoubtedly used his "*pijl lood*" earnestly and continuously from the time that he sighted the then virginal slopes of Atlantic Highlands until he had passed through the lower bay, the Narrows, the upper bay and finally cast his anchor somewhere in the Hudson River. There was no welcoming greeting from a pilot boat off Sandy Hook for Hendrik and so the first scientific casting of the lead in the waters about what later became New York Harbor was done by the intrepid Dutch navigator from a little lead-heaving platform off the rail of the famous *Halve Maan.*

The earliest known American pilots were the Seawards, John and James, although the exact period of the Seawards' activities is a bit too far back even for the fairly complete records of the local pilot association or the records in the great libraries. The first Seawards came over in the Mayflower, which probably led to their becoming imbued with the idea that a pilot on the New World shore would be a good thing to have around for the boats from England that were expected to follow the Mayflower.

One of the earliest recorded instances where American pilots followed their profession was during the time of President George Washington where it is stated that the first President "arrived at Elizabethtown, where he was met by the Congress deputation and other dignitaries upon the occasion of his second inauguration.

These all, with General Washington, embarked in the barge manned by thirteen pilots in white uniforms, commanded by Commodore Nicholson and with John Randall, as coxswain, and proceeded in stately fashion across the bay to the Battery where the citizenry welcomed them with loud acclaim."

There is no authentic record of any pilot keeping a lookout for ships off Sandy Hook in the early days of the Colonies, although it is believed that the British, quick to see the advantage of an experienced harbor pilot such as Frans Naerabout had proved himself to be, undoubtedly established a piloting system in the port of New York after they had changed its name from that of Nieuw Amsterdam, even though these pilots may not have been organized as a body of men under government or local control. In fact, it is doubtful if pilotage in New York Harbor became a really organized profession until 1837. Until that year the best available records seem to indicate that every pilot worked for himself—a case of every man for himself and the devil take the hindmost. The records do show that, in 1811, there were ten Sandy Hook pilots on the job as against but six in 1822, plain evidence that there was no increase in piloting activity since the war of 1812.

There was not then, as there is today, any form of compulsory pilotage and there was not, therefore, any inducement for efficiency except the free competition between the rival pilots for jobs of piloting which remained for decision solely with the masters of incoming ships. Before regular pilots began their work the masters of incoming ships, when they wanted a pilot, used to hail a fisherman and take him on board to act as pilot into the harbor.

THE NORWAY

Passing Sandy Hook in a fierce Northeast gale in the winter of 1862 in charge of Pilot Electus Comfort

FIRST PILOT'S LICENSE

THE year 1837 saw the first regularly appointed pilots, under the control of a State Commission, by virtue of an act passed by the New Jersey Legislature, but long before that the State of New York licensed experienced mariners to do piloting in New York Harbor—although not under the control of any commission—as witness the picturesquely-worded license given one Zachary Rufler, who has the distinction of being the first duly licensed pilot in New York waters. Says this first license: "The people of the State of New York, by the Grace of God free and independent, to Zachary Rufler, mariner, greeting: Know ye that, we being well assured of the ability, skill and care and circumspection of said Zachary Rufler, we have nominated, constituted and appointed and by these presents nominate, constitute and appoint you, the said Zachary Rufler, to be one of the branch pilots of the Port of New York to and from Sandy Hook from and to the said port. You, the said Zachary Rufler, truly behaving yourself in all things, as becometh in the service and station of a pilot and observing, doing, fulfilling, keeping and performing all and singular those things which, on your part and behalf as a pilot aforesaid are and ought to be observed, done, fulfilled and kept, and that in and by all things according to the directions, true intent and meaning of an Act of the Legislature of our said State of New York, passed the 14th day of April, 1784, entitled an Act for the regulation of pilots and pilotage for the Port of New York and for other purposes therein mentioned; to have and to hold the said office of branch pilot for the Port of New York together with the fees, salaries, perquisites and advantages thereunto * * * In testimony whereof we have caused these, our letters to be made patent and the Great Seal of our State to be hereunto affixed. Witness our greatly and well-beloved George Clinton, Esquire, Governor of our said State, Governor and Commander-in-chief of all the militia and Admiral of the Navy of the same by and with the advice and consent of our Consul of appointment of our City of New York the 22nd day of April, in the year of our Lord one thousand seven hundred and eighty-four and of our independence the eighth."

From 1805 to 1836 there was little system in the pilotage in New York Harbor. The winter of 1835-1836 had been a particularly disastrous one for shipping along the coast. One winter's afternoon during that period two immigrant ships—sailers, of course—had worked in close to the Sandy Hook lightship. The wind was east-southeast, blowing very heavy and approaching a gale. The two packets hove to off the lightship with signals flying for a pilot, firing guns to further attract the port scouts, whose boats

were anchored well inside Sandy Hook bay. As has been stated, it was an off year for pilot efficiency in New York Harbor and the two immigrant packets were unable to get a pilot to bring them into the Narrows. The captains of the two immigrant ships had hove to with heads offshore and, not being able to beat to windward, were finally forced upon the Long Island shore. One of the ships went aground to the eastward of Rockaway and the other to the eastward of what is now known as Jones's Inlet. Each ship had from 150 to 300 passengers and by the break of the next day nearly every soul on board had perished. This catastrophe, brought about by the absence of direct control and organized management of the pilots then plying their trade, caused the appointment of the Commission of Pilotage for the State of New Jersey, with power to examine and appoint men qualified to act as either full branch or deputy pilots for the Ports of Newark, Perth Amboy and the Harbor of New York by way of Sandy Hook. The first group of pilots to be appointed under this act consisted of Theophilus Beebe, a fisherman who was running a smack out of Fulton Market, New York; Lyman Beebe, Clinton Beebe and James Chapman, all of whom were appointed as full branch pilots and Nicholas Van Gelder, Robert Pease McKnight Smith and two others, who were made deputy pilots. These men used a small fishing smack, temporarily, until the State of New Jersey built them a more suitable craft and that boat, when completed, was the largest pilot boat ever placed in commission; too big, in fact, to be handled easily for the work she was expected to do.

So in 1837, we find twenty-three pilots working at the Sandy Hook station, in four pilot boats. Three of the boats cruised about while the fourth remained as a "station boat" in close proximity to the lightship. It was necessary then, as it is now, to maintain such a "station boat" at the lightship in order to insure the bringing back ashore of pilots who have taken ships out of the harbor and who are "dropped" after the lightship is safely passed. Otherwise there would be no assurance that a pilot could be taken off the outgoing ship. Besides these twenty-three sturdy New Yorkers, nine faithful men of the sea went out in the boat built for them by the State of New Jersey, making a total representation at Sandy Hook of thirty-two pilots, with competition running strong since the advent of the Jerseyites.

AN UNUSUAL EVENT

A full-rigged "Whaler" leaving New York harbor in the olden days

PUTTING A PILOT ABOARD IN A STORM

CRUISING FAR OUT TO SEA

FOR some reason or other the merchants of New York City were not satisfied with the manner in which the pilots chose to conduct their activities, although the records of the day showed a large number of daring feats of seamanship and disregard of personal risk on the part of the pilots then on duty.

It thus came about that, in 1845, these merchants demanded that all pilots cruise well outside of Sandy Hook and supplemented their ukase by appointing seventeen pilots quite independent of the regularly-appointed State pilots, thus inaugurating a three-cornered competition which kept matters going at a lively pace until the appointment of the first New York State Pilot Commissioners in June, 1845, just about nine years after the creation of a similar commission by the State of New Jersey.

New York State went New Jersey one better by legalizing an extra pilotage fee—of one-quarter of the total pilotage on a vessel —where the services of the pilot were accepted fifteen miles or more outside of Sandy Hook. It was not long before the pilots began cruising far beyond this fifteen-mile radius, often as far as a point below Sable Island, and the logs of the old pilots of the late forties show innumerable entries of such extra pilotage allowed on "pick-ups" far out in the Atlantic.

The year 1860 saw seventeen New York pilot boats in service (the so-called merchant pilots having since been merged with the regular New York organization), manned by forty-two pilots; and four New Jersey pilot boats, accommodating thirty New Jersey pilots.

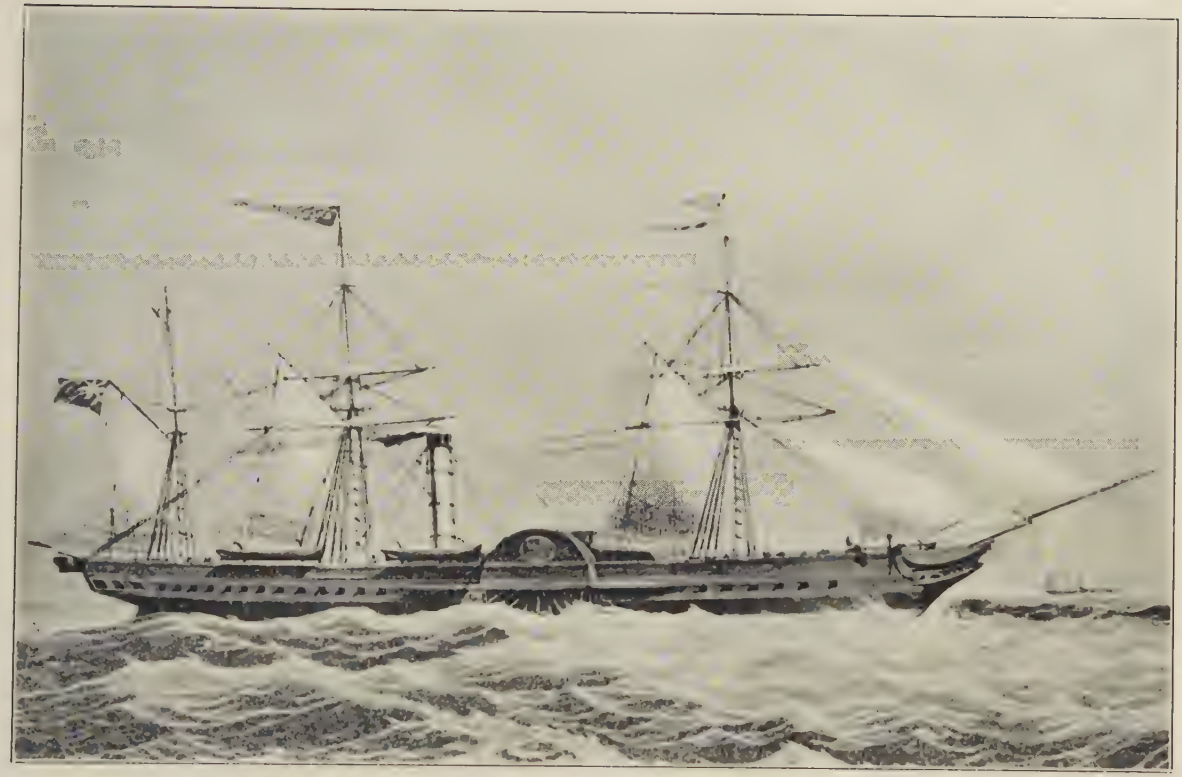
That even in the old days of the merchant marine the work of the pilot was considered as being shrouded in a delightful mystery of the deep is evidenced by the articles of apprenticeship issued to one John Kelso, which read: "Witnesseth, that John Kelso, now aged sixteen years, hath put himself and by these presents by and with the consent of Henry Kelso, his father, by his sealing and delivering, hath put himself and by these presents doth voluntarily and of his own free will and accord put himself apprentice to John Funck of the City of New York, to learn the art trade and mystery of a pilot, for the piloting of vessels to and from the City of New York by Sandy Hook and after the manner of an apprentice to serve from the day of the date hereof, for and during the and until the full end and term of five years, next ensuing, during which time the said apprentice his master faithfully shall serve, his secrets keep, his lawful commands everywhere readily obey; he shall do no damage to his master, nor see it done by others without letting or

giving notice thereof to his said master * * * he shall not commit matrimony within the said term and at cards, dice or any unlawful game he shall not play, whereby his master shall have damage, with his own goods, nor the goods of others, without license from his said master. He shall neither buy nor sell; he shall not absent himself day or night from his master's service without leave, nor haunt ale houses, taverns or playhouses; but in all things shall behave himself as a faithful apprentice ought to do, within the said term. And said master shall use the utmost of his endeavor to teach or cause to be taught or instructed the said apprentice in the trade and mystery of a pilot for the piloting of vessels to and from the City of New York, by Sandy Hooke, and during the said term of five years shall pay to said apprentice the sum of seven dollars per month until the said apprentice shall be appointed boatkeeper, after which he shall pay him the wages usually allowed to boatkeepers. And for the true performance of all and singular the covenants and agreements aforesaid, said parties bind themselves each unto the other firmly by these presents. In witness whereof the said parties have, interchangeably, set their hands and seals hereunto this eighth day of August in the twenty-fifth year of the independence of the United States of America and in the year of our Lord one thousand eight hundred and one."

Thus was assured the efficiency of the earliest Sandy Hook pilots and only through a comparatively brief period was this efficiency relaxed and then only because of the peculiar disorganization brought about by the War of 1812.

PILOT BOAT ALEXANDER M. LAWRENCE

Largest boat of the fleet



S. S. BRITANNIA OF THE CUNARD LINE

Pioneer of the great fleet of leviathans on her maiden voyage across the Atlantic, July, 1840

TRAGEDIES IN THE SERVICE

THAT thorough training for the position of Sandy Hook pilot was essential, is shown by the extremely hazardous nature of the work the pilots were continually facing. Between 1838 and 1860 fifteen pilot boats met with disaster at sea. The Franklin was lost by being driven ashore in a heavy gale and all hands on board perished. The following year, on July 28th, witnessed the loss, in a hurricane of the pilot boat Gratitude, with the loss of four lives—two pilots and two seamen. Three years elapsed and then the trim San Jacinto went down with all hands. The next tragedy of the Sandy Hook men came with the driving ashore of the Mary Ellen, in the winter of 1844-1845, with the loss of her entire complement. The Jacob Bell went down in a gale far out of the Hook in 1854, with all hands and on January 10, 1856, the Edward K. Collins was driven ashore on Fire Island in a blinding snow storm. Pilot Robert Mitchell froze to death on that tragic tour of duty while the boat-keeper, only just promoted after a long apprenticeship, the cabin boy and the cook were drowned. The pilot boat Washington was lost at sea with the death of one pilot and six sailors in 1857, and the Jacob Westervelt was struck by the British steamer Saxonia, 270 miles East of Sandy Hook, causing the death of one of her pilot company.

This carries us only to 1860. The next four years saw as many disasters to the little schooner yachts that poked their saucy way out of the Horse Shoe and dared the elements in quest of ships to be piloted safely into port.

Then came the Civil War and all its tragedies. It was not long after the firing upon Fort Sumpter that the Sandy Hook pilots felt the full weight of war's merciless hand. The official log of the Sandy Hook pilots records no more stirring occurrence than that of August 12, 1864, when the pilot boat William Bell cruising about on a peaceful mission, came upon a steamer which her pilot-in-charge believed would want to be taken into port. The expected "pick up" proved to be the Confederate privateer Tallahassee. The William Bell came upon the enemy ship 70 miles east southeast of Sandy Hook and was captured and destroyed by the Confederate after being used for a short time as a tender to the converted Confederate merchantman. On the same day the James Funck, another Sandy Hook boat and, like the William Bell, on the lookout for incoming ships, was captured by the same privateer. In both cases the pilots had believed the Tallahassee to be fair commercial prize for pilotage and the competing pilots had engaged in a merry race to be first at the Tallahassee's side. The William Bell had won the race and it

was while her pilot was doing involuntary and unwilling pilot duty for the Confederate ship that the James Funck came up, quite unconscious of the fact that the William Bell had already been confiscated.

This day's eventful happenings makes quite a story in itself and we quote the very best authority possible under the circumstances, Colonel John Taylor Wood, who commanded the Tallahassee on her commerce-destroying cruise and who later wrote about the captures off Sandy Hook in a brilliant article in the Century Magazine, nearly twenty-five years later.

PILOT BOAT WILLIAM BELL

Being chased by the Confederate privateer Tallahassee, August 12, 1864

AN ECHO OF THE CIVIL WAR

AFTER recording his trip up the coast after the Tallahassee had been placed in commission on July 20, 1864, during which his commerce-destroying cruiser put out of the running a number of sailing ships, Colonel Wood tells of the events that occurred on August 12th. "Standing over towards Fire Island Light," writes the Colonel, "we found seven sail in sight. One ran down towards us, which we recognized at once as a New York pilot boat. She luffed to under our quarter, launched a small boat and a few minutes later a large, well-dressed man in black, with a high hat, heavy gold watch-guard, a small valise, and a bundle of papers under his arm, stepped over the side. As he did so his eyes glanced up at our flag at the peak, which was lazily unfolding in a light breeze. 'My God! what is that? What ship is this?' said he, turning to me. 'The Confederate cruiser Tallahassee,' I replied. A more astonished man never stood on deck of a vessel. He turned deadly pale and drops of perspiration broke from every pore; but rapidly bracing himself, he took in the situation, and prepared to make the best of it. He was told that his vessel was a prize and that I would make a tender of her. He was ordered to go on board and to return with his crew and their personal effects. It was the pilot boat James Funck, No. 22, one of the class of fine weatherly schooners found off New York, from one to two hundred miles out, at all seasons, manned by as thorough seamen as ever trod ship's deck. Years before, while I was attached to the sloop of war Germantown, I had seen one of them work this vessel under sail down the East River, against a head wind but fair tide, 'backing and filling' in a manner that called forth the admiration of all. I put on board two officers and twenty men, with orders to keep within signal distance. She (the James Funck) was very efficient when several sail were in sight, overhauling and bringing alongside vessels, that I might decide upon their fate. The captures of the bark Bay State and the brigs Carrie Estelle and A. Richards followed in quick succession. We had now over forty prisoners, and their baggage on board, lumbering up our decks and it was necessary to make some disposition of them. Towards night No. 22 brought alongside the schooner Carroll. She was bonded by her captain, acting for the owners, for ten thousand dollars; and after he had given a written engagement to land the prisoners at New York, they went on board with their effects. Before leaving they were all paroled. All the prisoners we made, with hardly an exception, were most eager for their paroles. One said: 'This is worth three hundred and fifty dollars to me.' Another said: 'I would not take a thousand dollars for mine.' One

skipper said that if it would protect him from the draft he was partly reconciled to the loss of his vessel. Another, whose vessel had been bonded, brought all his crew on board to secure their papers. The next victim was another pilot-boat, the William Bell, No. 24. My object in capturing these vessels was, if possible, to secure a pilot who could either be paid or coerced to take the ship through Hell Gate into Long Island Sound. It was now near the full moon. It was my intention to run up the harbor just after dark, as I knew the way in by Sandy Hook, then go on up the East River, setting fire to the shipping on both sides and, when abreast of the Navy Yard, to open fire, hoping some of our shells might set fire to the buildings and any vessels that might be at the docks, and finally to steam through Hell Gate into the Long Island Sound. I knew from the daily papers, which we received only a day or two old, what vessels were in port and that there was nothing then ready that could oppose us. But no pilot could be found who knew the road or who was willing to undertake it and I was forced to abandon the scheme. * * * As the tender (the pilot boat) proved a draw-back to our rapid movements I determined to destroy her. It was a mistake for I was authorized by the government (Confederate) to fit out any prize as a cruiser and this one ought to have been sent along the eastern coast."

ELECTUS COMFORT—BEAU BRUMMEL OF THE SEA

Captain of the pilot boat J. F. Loubat No. 16—Captain Comfort was in active service 42 years

THE DAYS OF SENTIMENT

IN THE days before and just after the Civil War there was a deal more sentiment and ceremony attached to the coming and going of pilots than there is in these ultra-commercialized days. The Sandy Hook pilot came on board a ship like a visiting admiral, greeted at the rail by the captain of the ship with the major portion of the crew standing about, if not at attention, at least in respectful attitude while the newcomer was given his welcome aboard.

And in those days there were no peaked caps, rough clothes or sou-westers worn by the sturdy sea scouts who lay in wait for arriving ships. Plug hats and frock coats constituted the au fait apparel for the Sandy Hook pilot. On shore the pilot invariably was the Beau Brummel of his home port. Those were the good old days when a man divided his calling between sentiment and strict commercialism and the combination made for good fellowship, respect and pride of occupation.

It was just about this time that a prominent New York merchant began his semi-annual trips to Europe. He was E. H. Van Ingen, a cloth merchant, who died in New York during the early part of 1921, after having crossed the Atlantic some 110 times, making 55 round trips, two each year. Even the world war could not keep Mr. Van Ingen at home and during 1914, 1915, 1916, 1917 and 1918 he made his semi-annual trips just the same as ever. The reason for bringing Mr. Van Ingen into this history of the pilots of New York Harbor is because this veteran transatlantic traveler expressed the opinion of every human being who has ever crossed the oceans, that the taking on or dropping off of the pilot always has been, is now and always will be the most stirring incident of a long sea voyage. After more than fifty consecutive years of sea travel Mr. Van Ingen told the writer that he never missed, if he could help it, seeing the pilot dropped on the outgoing voyage or taken on upon the arrival of his ship in port. The venerable ocean-goer said that the 110th time that he saw the performance was just as interesting as the first time he saw it in the early sixties.

Unlike the pilotage system of today, which makes the taking on of the guiding hand for the harbor navigation a matter of little ceremony and of almost precise adjustment (even though the hazards are still very great in bad weather) the pilot's work in the old days was invariably one of quick action, hot races and absolutely expert seamanship if he would secure the incoming ship as his own particular "prize." As against the single pilot boat that is, today, rowed out to the incoming steamer from the "station pilot boat"

there were in the earlier days and until 1895 more than thirty pilot boats (sail boats) in service, each of which strove to get to the incoming vessel first. In 1865 there were 32 of these trim little schooner yachts, 24 of them carrying New York pilots and 8 of them New Jersey pilots. That was the year that Nathan Wood, a veteran in the pilot service today, became a pilot, at the age of thirty years. Mr. Wood, now 86 years old and still as active as at fifty, remained in the service for forty-seven years, retiring in 1912.

It was always a race in those days and often a close one. Sometimes the little boats, each with its number prominently displayed on its sail, came in a bunch towards the incoming ship, always striving for the lee side, so as to get the full benefit of the calmer seas and often the race between a dozen or more pilot boats ended right under the rail of the arriving vessel. That was, of course, when the incoming craft had not secured a pilot far out at sea, for sometimes a pilot would be taken on in Longtitude 60, some 400 to 600 miles away, off Sable Island.

The pilots then often remained on board their little 68-ton boats for a week before getting a ship and a chance to stretch their legs on shore. The little sailers were built expressly for the work they were intended to do—quick maneuvring and quick sailing—down deep in the water to prevent their capsizing, drawing twelve to fourteen feet and more and with a rocker keel amidships. That they were staunch boats is evidenced by the fact that those of the pilot boats that were not lost in accidents or in heavy weather later were turned into pleasure yachts by those who bought them. Nathan Wood witnessed many tragedies and helped to save many lives during his long term as a pilot. At one time the pilot boat Favorita No. 5 was struck by the steamer City of Port au Prince. It was on a bleak February morning in 1884, with a nor'wester raging and much vapor over the sea. Mr. Wood had to crawl through a ragged hole in his boat. Badly hurt, he stuck to his job as pilot and brought his vessel in safely—then spent many long weeks in a hospital ashore.

TALES OF DISASTER

THE fleet of pilot boats had disasters almost every year. Previous to 1858, eighteen vessels were lost. The most common disaster has been loss or damage by collision, seventeen pilot boats having been run down since 1858. The Ariel Paterson was run down by the steamer Commonwealth; the Moses H. Grinnell was struck by the steamship Union on the Outer Middle Ground, the Mary Taylor was run down by the U. S. Transport Fairhaven, in 1863; the Josiah Johnson was run down by the schooner Wanata and the A. T. Stewart was sunk by the steamship Scotia, in 1869. The John D. Jones was run down by the steamship City of Washington, on a stormy night of March, 1871. The Caprice was run down in the Narrows, by the steamship New Orleans, in 1876. The Abraham Leggett met her fate when run down by the steamship Naples, 1879. She was becalmed in the lee of the Naples when the steamship rolled over and crushed the little pilot boat. The Columbia was run down by the steamship Alaska, in 1883, and the Washington met a similar fate when run down by the steamship Roma, off Sandy Hook, in 1884.

The Columbia, run down by the Alaska, had before had a peculiar experience with a sister ship of the one that caused her later loss. This was when the Columbia had put a pilot on board the inbound steamer Arizona, well below the Massachusetts coast. A gale was blowing and the yawl that had placed the pilot on board the Arizona was capsized, throwing her two apprentices into the sea. A second yawl was put over from the pilot boat with two men to rescue those of the first yawl, but that second yawl also capsized, both yawls being carried away in the heavy sea that was running. The Columbia, with her remaining navigator, managed to make Newport, R. I., with her flag flying at half-mast for the supposedly drowned crew. Much to the surprise and happiness of the sole "survivor" he learned, upon arriving at the wharf in Newport that the Arizona had picked up the occupants of both yawls, beyond the sight of the "survivor" on the Columbia, and had brought them safely to New York.

The Columbia figured in several accidents before her final destruction and Pilot Frank P. Van Pelt played a leading, if involuntary part in many of them except the final tragedy, when he happened not to be on board of her. The series of accidents of the Columbia culminated, in 1881, with her being run into by the steamship Rotterdam (a comparatively little steamer as viewed from the standpoint of to-day and the grandmother of the present leviathan Holland-American Liner Rotterdam). That particular Rotterdam

was run down by the Wilson Liner Lepanto, with the loss of two of the Rotterdam's crew, the following year. The Lepanto's bows were stove in by the collision and she took the pilot boat Columbia, the crew of which had seen the disaster to the steamer that had run them down the previous year, in tow for the purpose of having a rescue craft at hand in case the Lepanto's captain should be unable to make the harbor owing to his ship's damaged bows. And the next year, 1883, the Columbia received her *coup de grace* from the Alaska, being sent down with all hands.

A weird story told by Pilot Frank Cramer covers the career, or part of the career, of the pilot boat Hope No. 1—the "Patsy" Hope, as her owners affectionately called her—which was, before her coming into the pilot service, a dispatch (sail) boat during the Civil War. She was long and narrow, was "Patsy," and, according to Captain Cramer, looked like a long coffin. She had no freeboard and was, altogether, a most peculiar-looking craft. But she could tear off thirteen miles an hour in a fair wind. She had had a series of mishaps. At one time sixteen souls, all of them apprentices, were lost. On another occasion four men were swept off her bowsprit by a great sea and on another occasion three men were carried overboard from her quarter-deck while setting the main try-sail.

On March 12, 1890, the "Patsy" Hope was lying on the Sandy Hook Bar, holding station. During the evening one of the apprentices reported to Captain Lyons, who was in charge at the time, that two men had gone forward "and have not returned." Nothing could be seen of anyone forward on the deck so Captain Cramer told the apprentice to call the roll in the cabin below. The boy came back saying that all on board had been accounted for. The pilot thought no more about the apprentice's belief that some of the crew had "gone forward and have not returned" until long afterwards and then he had reason to remember the premonition, or whatever it may be called, with a vengeance. It was close to midnight and raining hard when Captain Cramer called out to get the Hope under way so as to get a safe anchorage. A gale from the eastward was coming up and a thick fog was spreading over the water around the Hook. Captain Lyons, another pilot, was at the wheel and started to run into the Lower Bay for safe harbor. The gale piled the "Patsy" Hope on Sandy Hook Beach before those on board were aware of it and the Sandy Hook life-saving crew rescued all hands over the bows, all going forward not to return. In twenty-four hours nothing was left of the coffin-like pilot boat except a mass of splintered wood on the beach.

Still another catastrophe was that of the Pilot Boat Mary E. Fish, built to replace the Mary Taylor which was lost, was run down in her turn by a three-masted schooner near Barnegat and the Mary & Catherine was run down by the steamship Haverton, off Absecom Light, in 1885. The Commodore Bateman was run down by the steamship Suevia, while making fast time in a dense fog, on George's Bank, and the Charlotte Webb was rammed by the steamship La Normandie, a French Liner, in a dense fog near Sandy Hook lightvessel, in 1889.

PILOT BOAT COLUMBIA

Run down off Fire Island December 3, 1883 by S. S. Alaska of the Guion Line.
All hands lost

LOSS OF THE COLUMBIA

NONE but those who have taken a trip in one of the old style sail pilot boats can feel the horror of a dense fog and suddenly seeing the bows of a steamer, looming up as if mountain high, bearing straight down upon the little cockleshell riding hesitatingly in the sea, her brave complement hoping against hope that no reckless navigator will cut through the Atlantic waters unmindful of smaller craft in the way of his big ship.

Next on the list was the Eben D. Jordan, which was struck by the steamship Saginaw, off Barnegat, in 1892. The James Funck was sunk in the Narrows by the steamship Union, in 1862 (being the second pilot boat to fall victim to the same steamship) but was subsequently raised and two years later was seized by the rebel privateer Tallahassee and used as a tender and decoy, as before described in detail.

The report of the loss of the Columbia, in 1883, indicates the extreme danger that pilots encountered while trying to board a steamship in rough weather. When the steamer Alaska was sighted, the pilot boat was head-reaching to the northward on the port tack under close reefed mainsail and storm staysails. The wind was blowing a gale from the northwest and an ugly sea was running; but the weather was clear, although cold. The pilot boat plunged deeply into the heavy sea and heeled to the force of the wind until her lee rail was awash. The wind whipped off the tops of the waves and filled the air with spray. When the steamship sighted the pilot boat, off Fire Island, her course was changed to make a lee for the pilot boat's yawl and she seemed to stop when the yawl was launched and two men and a pilot went over the side of the pilot boat and dropped into the yawl. Before the yawl had proceeded more than a boat's length, the Alaska unexpectedly forged ahead. The yawl was capsized by the surge from the port bow of the steamship when she pitched into a big wave and the three men were thrown into the sea. Before anything could be done to save them, the bow of the Alaska rose and fell again and hit the pilot boat, cutting it in two and crushing the decks and beams to bits. Broken timbers were swept under the bows and along the sides as the Alaska moved ahead again and passed over the spot. Four pilots, four sailors and the cook, the entire complement of the Columbia, perished in this disaster. One of the pilots was Ralph Nobles who, in 1879, tried to introduce a steam pilot boat into the service. With two owners of the Pilot Boat Widgeon that had been condemned as unseaworthy, he bought the tug Hercules and converted her into a pilot boat.

The rest of the pilots objected to the scheme, and the Pilot Commissioners upheld them. Nobles went into court with the controversy but finally withdrew and sold the tug. Less than twenty years later the scheme of Nobles came into practical effect although he, himself, had nothing to do with the conversion of the pilot system to steam from sail.

SACRIFICES TO DUTY

THE Thomas D. Harrison and the Ezra Nye went ashore at Bay Ridge, and the Edmund Driggs was crushed by ice on the same shore, while the Hope went ashore off Fort Wadsworth, Staten Island. All these were subsequently pulled into deep water, raised and repaired and kept on duty until sold out of the pilot service. The Jesse Carll stranded on the bar at Zach's Inlet opposite Amityville, in the big gale of October, 1889, and the Pet was wrecked at Newport. Nine boats were at sea when a cyclone struck this coast in September, 1889, and all weathered the great storm successfully. The pilots were carried out to sea because a boat to take them off could not keep her station at the entrance to the harbor.

The stranding of the Jesse Carll, in 1889, indicates the experiences and danger of a struggle against wind and sea of the old type sail pilot boats. The pilot boat had put off one of the five pilots aboard it and was standing off shore, near Fire Island, when she began to feel the force of an advancing Southern cyclone. Early in the evening she was in nasty weather, as the pilots have it. The wind was offshore most of the time; but it varied and shifted. At midnight a violent thunderstorm burst overhead and the increasing wind raised a furious sea. Gideon Mapes, one of the best pilots then in the service, had charge of the Jesse Carll and had her under double reefed sails and standing up against the wind and sea in fine shape. Fire Island light was in sight until an hour after midnight. Then came a deluge of rain and the wind increased to hurricane force. Soon a thick mist covered the water and shut out everything in sight. The pilot boat reached off and on, expecting to keep out of shoal water, but on one tack, she went too close and struck on the bar at Zach's Inlet. The sails were unfurled and raised with the hope of forcing her off but all efforts failed. Her signals of distress were seen by the life-saving crew on the beach and before daybreak the ten men on board were taken ashore in boats. After daybreak the crews tried to pull the pilot boat off but when she shifted to deeper water she filled, a hole having been made in her bottom. Then the pilots abandoned her but she was raised and repaired some time later.

The Pilot Boat Avery came out of a storm in a remarkable way more than forty years ago. She was under three hooks of the mainsail in a westerly gale offshore when she was knocked down. In a few minutes she would have foundered but the jib which was furled, was washed off the bowsprit and the wind caught the head of it and ran it up the stay, paying her head off so that she righted and saved herself.

John L. Canvin, one of the pilots who owned the C. H. Marshall, lost his life in a singular mishap in 1890. He had been put aboard the barkentine Edward Cushing, off Highland Light and, as the vessel could not enter the harbor that night, he advised the captain to lay to until daylight. Soon afterwards the storm that had been coming up increased in violence and under the shortened sail the vessel fell off into the trough of the sea and rolled badly. The deck was slippery with ice and, as Canvin was a tallish man, he had hold of the spanker boom. The crew had clewed up the foresail and were swinging the yard when the vessel lurched to leeward, then rolled far over to windward. The man at the wheel heard Canvin's cry when the roll broke his grip on the boom and sent him, head first, over the low rail into the sea. The vessel's boat had been washed overboard and nothing could be done to save the pilot. The barkentine was driven one hundred miles off the coast afterwards.

Pilot Henry Devere, who had been compelled, by an attack of asthma caused by exposure, to retire from the service, had a queer experience when he sailed in the James Funck before the Civil War. A brig under shortened sail was sighted one day and, when the pilot boat drew alongside the pilot hailed a boy at the wheel. The boy seemed to be stupefied and the pilot was obliged to hail him several times before he started up, leaned forward into the companionway and called, feebly, to someone below. Then a gaunt man came upon deck and said that the crew had been stricken by fevor. The pilot went on board and with the help of the mate headed the vessel towards Sandy Hook. The captain was ill in his stateroom. The body of one of the crew that was found on deck was tied in mosquito netting and dropped overboard. The boy died in the Lower Bay and the captain died off the Battery, leaving the mate as the sole survivor of the crew. The pilot and the mate furled the sails, made the line fast, when the vessel took a tow and came up the river.

Among the old-timers that have made the fleet famous are the Edmund Blunt, built in 1858; the Ezra Nye, built in 1859; the Charles H. Marshall, built in 1860, and the Edward F. Williams, built in 1863. All of these were repaired and rebuilt and are still in good condition in various trades but not as pilot boats, of course. The Nye was transformed into a yacht and went to the Mediterranean, far away from the original scenes of her triumphs, as the floating home of Marion Crawford, the novelist. The Actaea and the Jesse Carll and the Eben D. Jordan also were converted into yachts but the majority of the other discarded pilot boats blistered their noses for a long time in Erie Basin, once famous—or is it infamous?—as the graveyard of ships.

One of the exceptions in the discard rule was the Thomas D. Harrison. For twenty years this trim little schooner had known service as a pilot boat and when the day of the steam pilot boat came she was disposed of to an importer and exporter who put her in the trade to Africa. She was a craft of only a trifle over 66 tons, with a length of 80 feet and a beam of 22 feet, drawing but little water. Nevertheless, she proved staunch enough for the hazardous business to which she was assigned.

PILOT BOAT JAMES B. STAFFORD

Built to replace the Enchantress which was lost with all hands in blizzard of 1888

DARING RESCUES

PILOTS and sailors on board the pilot boat Walter Adams added laurels to the record of the Sandy Hook men when they took off the passengers and crew, as well as all their effects, from the British steamship Alvena, bound from New York for Haytien ports, when that vessel was run down and cut through by a big British freighter at the entrance of Gedney's Channel off Sandy Hook, on the afternoon of January 19, 1897. The Alvena had to be beached and her decks were submerged at high water, so that the need of getting her passengers and crew off was an urgent one. It was the same pilot boat that happened along at the opportune time to rescue the 150 fishermen excursionists from the stranded steamboat John E. Moore, on Romer Shoal, on Thanksgiving Day of the same year. The Moore had gone aground in a dense fog and quickly filled with water. It was, indeed, a true Thanksgiving Day for the fishermen who were saved from drowning by the Sandy Hook pilots on that occasion.

There was wild confusion when the John E. Moore struck on south of Romer Shoal on Thanksgiving Day morning. The John E. Moore had been in the service of transferring immigrants from incoming steamers to Ellis Island, under contract with the various steamship lines and was, in every way, a staunch and seaworthy craft. In fact, after having been raised, following the accident of 1896, she continued in this immigration service and is still engaged in it to this day.

The steamboat had left the Battery early in the morning, somewhat delayed by the dense fog reported off Sandy Hook and which had also thrown a heavy mist over the inner harbor. All on board were veteran fishermen, amply equipped with fishing material and also with that which, in those pre-Volstead days, made a fishing excursion complete in its attractive allurements. The Moore, under Captain Morrell, a careful and experienced navigator, made her way slowly down the upper bay towards the Narrows, then picked her way gingerly through the Narrows into the lower bay, Captain Morrell having intended to run down inside the "Oil Spot" and make a short cut to the Fishing Banks. The tide was running in and the fact that he had little headway and nothing could be seen beyond a few feet from the pilot house caused the skipper to lose his reckoning. Nobody on board anticipated disaster and there was a lot of merrymaking on the Moore amid the sombre blowing of her fog whistle and the ringing of bells on vessels that were hove to in the dense fog in the lower bay.

A sudden shock came as the bottom of the steamboat scraped a hard surface, the lead was thrown over the side following a quick order from Captain Morrell, with the engine-room gong sounding the signal for full speed astern. Then came a hard, grinding noise and a sudden stop of the boat as every man on her was tumbled off his chair or bench or out of the bunks in which many of the fishermen had hidden for a little nap before getting at the work of fishing when the boat should reach the Banks.

As the fishermen rushed out on deck they found the weather so thick that they could not see their hands before their faces. It was plain that the Moore was beginning to settle with the sea pouring over the sides of the excursion boat and into the open door of the fireroom. There were hoarse cries from below and a great cloud of steam rose from below, enveloping those running about or struggling with one another on the deck. The cry of "Fire" did not tend to make matters any better and a panic was soon in full swing. Where the majority of the passengers on the Moore might have remained safely on deck until rescued in the face of the slow settling of the steamer on the rocks, the cry of fire caused the majority to lose their heads entirely and several of the fishermen jumped overboard into the bay. There was a wild scramble for the life-preservers as the mate of the Moore reported, after a dash into the hold, that the steamboat was taking water rapidly. The life-preservers were torn from their chests and fastenings, causing many of them to be destroyed in the fights that ensued for their possession by the maddened and panic-stricken excursionists. Some of the passengers rushed to the life-rafts and others got into the life-boats before they were unfastened and made ready for lowering. Captain Morrell did everything to stem the tide of panic, calling on the excursionists to be men, but his words were wasted, although he assured all on the deck that the Moore could sink only a few inches more and that there was no chance of her going beneath the surface. Some of the passengers were restored to reason by the coolness of Captain Morrell but those who had leaped overboard were in a bad way. Then those still on board moved to the stern in a body, causing the Moore to settle further by the stern and a new panic seized those who had intended following Captain Morrell's advice and remain quietly on deck. In a few moments the rail on the after deck was awash and only the Moore's bow remained out of water. Finally a life-boat was lowered and manned by the Moore's crew was sent for help and a dory also was put over safely with two officers who had orders to row to Sandy Hook and telegraph to New York for help.

While the telegraph instrument was ticking its call for assistance help came to the sorely-pressed complement on the Moore in the shape of the pilot boat No. 6, the Walter Adams. She was bound up the bay when the accident to the excursion boat occurred, having just been relieved from "station duty" and was bringing home the pilots who had been left aboard after a week's absence from home.

Besides Captain Hennessey and his crew there were on board the Walter Adams: Pilots Clarence Nichols, Henry Seguine, Thomas Burritt, Edward Earl, N. A. Wall, George Cramer, James Sayles, William Ferry, Andrew Anderson and Frank van Pelt. The pilot boat was coming in slowly through the channel. When she was off the south end of Romer Shoals the fog suddenly lifted a bit and Captain Moore saw the Moore on the shoal. At the same time those on the Moore saw the pilot boat, with her identifying number, and gave a mighty cheer. Captain Hennessey headed his boat directly for the Moore and the pilots prepared for the work of rescue, clearing their life-boats as the Adams ran as close in to the wreck as possible. The life-boats on the Adams were lowered and manned by the pilots just as the two remaining life-boats on the Moore were lowered, with a mad rush on the part of the excursionists to get into them. Fights started as men fought for preference in getting into the life-boats and finally the life-boats were capsized when dozens of the fishermen jumped into the boats at once. When the first of the pilot boat's yawls arrived alongside the Moore several of those who had been struggling about in the water were fished out. Then, when the yawl came under the Moore's rail several of the excursionists prepared to jump into the pilot rescue craft. Pilot Wall kept his yawl back, saying that the pilots would save all hands provided the passengers kept their heads. As many as could comfortably and safely be taken into the yawl were transferred to the Adams and then the yawl came back for another load, the two life-boats from the Adams alternating in the work of rescue. Seven to nine men were carried on each trip, so that the work of transferring the 150 excursionists and the crew of the Moore took several hours to accomplish. But it was done without accident, the last man to leave the ship with Captain Morrell and his mate, who had, in the meantime, returned from Sandy Hook in the Moore's yawl, being an accordeon player who had been engaged to furnish the music for the fishermen on their excursion and who kept playing "She may have seen better days," as the last of the rescued were taken off the Moore. As the player himself was being transferred into the rescue yawl he sang "Say au revoir but not good-bye."

LOSS OF THE S. S. OREGON OFF FIRE ISLAND

March 1886—All hands rescued by pilot boat Phantom

On both occasions the pilots had come on the spot at the psychological moment, as they had, eleven years before, come upon the Oregon, wrecked within sight of land and when the pilots rescued seven hundred passengers and crew of that ill-fated steamship and brought them safely into the harbor on the valiant little Phantom which pilot boat, two years later, met her own doom in the great blizzard of 1888, with the loss of six of her brave company. William O. Inglis, a reporter on the New York *World*, vividly described, at the time, the terrors of that blizzard as experienced on a pilot boat, tense hours when the brave hearts who had saved the lives of so many of their fellows found themselves without rescuers and were either cast ashore or sent down into the dark waters during those fearsome days at sea.

The Oregon disaster was peculiar in that a new, staunch and, at that time, modern steamship was run down and scuttled by a disreputable coal schooner. The Oregon, of the Cunard Line, was but two years old and had, during her brief career, broken several of the records for fast transatlantic traveling when she went to her doom off Fire Island in March, 1886. The catastrophe occurred before daybreak. Mortally hurt, the Oregon tried to make shoal water but began to sink before she could be beached. The passengers put off in boats, in a turbulent sea, and would have fared badly but for the timely arrival of the Phantom, with its company of hardy pilots. Every inch of deck room on the little pilot boat was jammed full with disheartened passengers and crew of the ill-fated Oregon, who had reason to be thankful, however, for the alertness of the Sandy Hook pilots and the promptness with which the intrepid little Phantom could be maneuvred and brought to them as a rescue boat. That none were lost in this lamentable accident was due solely to the pilots, a fact that was fully attested at the time and which received the fullest recognition from shipping men and the government.

Two other rescues stand out in the long list of sea disasters in which the Sandy Hook pilots were able to give succor to those who fell victims to the hazards of the sea. Old mariners still vividly recollect the work done by the pilot boat Edward Cooper when she came upon the Thingvalia liner Island, helpless with a lost rudder off the Grand Banks. The Island had a large passenger complement and a heavy sea was running. The pilots on the Edward Cooper went into quick consultation and it was decided that the only way in which they could assist the crippled liner was to have the Edward Cooper act as rudder for the Island. Steel cables were passed astern

to the pilot boat, fastened to her bits, and then the journey to Sandy Hook was taken up, the Island proceeding under her own steam with the pilot boat tugging behind, acting as a sort of drag on her stern and thus making it possible for the Thingvalia liner to steer a definite and safe course.

Likewise did the Jesse Carrl, cruising about well outside the Hook, come upon the German bark Erna when that sailing craft was on the point of foundering. Heavy seas were piling over her decks, which were made untenable by the shifting of her cargo, and the bark was in sore straits indeed. The pilots on the Carrl launched a yawl, got a line from the wallowing bark, and started to tow the unwieldy cripple towards Sandy Hook, a distance of some fifty miles. As the little pilot boat and her helpless charge were nearing the Hook a great sea suddenly struck the Erna and turned her over. It was then that quick work had to be done by the pilots, who put over two yawls and rescued the crew of the German ship, which became a total loss.

The rescues effected by the pilots outside of their work as pilots were without number, and hundreds of fishermen, professional and amateur, owed their lives to the promptness and bravery of the men who, presumably, were stationed at Sandy Hook and beyond only for the very commercial purpose of piloting incoming ships into the harbor and piloting outwardbound ships safely past the treacherous shoal waters off Sandy Hook and inside the lower bay.

PILOT BOAT WILLIAM STARBUCK

Run down by S. S. Japanese off Barnegat

THE TOLL IN THE SIXTIES

MANY of the pilot fleet went ashore on the beaches of New Jersey and Long Island and as several were pulled off and replaced in the service, it is difficult to enumerate the total of the vessels thus wrecked and abandoned since 1858. The Virginia went ashore near Rockaway shoals, in the dense fog in 1860. The Edwin Forrest was lost on Fire Island beach, in 1862, and the W. J. Romer struck a sunken wreck in 1863. The William Bell, as before related, was captured and burnt by the Confederate privateer Tallahassee in 1864, and another pilot boat by the same name went ashore off Amagansett during a gale and snow storm, in 1867. The Favorite and the George Steers were wrecked in 1865.

The period immediately following the close of the Civil War was quite as disastrous for the brave men of Sandy Hook as the earlier days, as far as the destruction of their craft and the loss of brave lives was concerned. Pilot boat upon pilot boat had to be built to replace those sent to the bottom either through the great gales that overtook the Sandy Hook men in the pursuit of their strenuous vocation or through accidents of navigation.

In 1866, two days after Christmas, Pilot John Fredell boarded the brigantine Christiania to bring her into port when the sailing vessel was rammed and sunk by the outgoing steamer North America, six miles east off Sandy Hook. All hands on the brigantine were lost and it was not until seven months after the fatality occurred that the fate of Pilot Fredell became known. The North America, returning from her cruise overseas on a visit to New York harbor, reported the accident. Those were the days without wireless and, as there had been no other vessel in the vicinity when the crash between the North America and Christiania occurred, there was no way of communicating the news of the catastrophe to these shores.

Twenty years before, in February, 1846, Thomas Freeborne, having boarded the ship John Minturn, went ashore with that vessel in a gale that came up when fourteen of the crew were frozen to death, as well as the New York pilot. Freeborne on that occasion is recorded as having given his coat to the wife of the captain of the Minturn, thus bringing about his own end in a most unselfish manner. On the highest hill in Greenwood Cemetery, in Brooklyn, N. Y., there stands a monument to Thomas Freeborne, erected by the citizens of Brooklyn of those days, as a testimonial to the self-sacrifice of this Sandy Hook pilot.

The G. W. Blunt was lost on the Long Island shore about thirty miles from Sandy Hook lightvessel, in 1875. The Caprice, that had been raised after having been run down in the Narrows, foundered

off Barnegat, in 1878. The W. H. Aspinwall was lost in 1880, and the Francis Perkins struck a wreck on Barnegat shoals in a gale and snow storm, in 1887. In the blizzard of March, 1888, the Phantom and the Enchantress were lost at sea and the W. H. Starbuck ran into the steamship Japanese—one of the few pilot boats to take the offensive in an accident—and was all but wrecked. The Edmund Blunt and the Edward F. Williams, as well as the W. W. Storey dragged their anchors and drifted ashore at Sandy Hook together with the Edward Cooper and the Centennial were abandoned in the Horseshoe, after ice jams had sent them ashore during the blizzard of March, 1888. It was during the great blizzard that the pilot boats Enchantress and Phantom, both of which had done splendid work time and again in the saving of lives were lost and were never heard from again. The Enchantress had a narrow escape in 1884. That was talked about in the cabins for many a year. She was weathering a gale off the Highlands and was under a double-reefed mainsail and the head of the jib. While tacking near the shore she missed stays, became unmanageable and ran into the schooner Sarah & Lucy, that was anchored in the lee of the land. Believing that the pilot boat would sink, the two pilots and five men that were on board leaped to the deck of the schooner. At that minute the wind struck the pilot boat's mainsail, the sheet of which was fast, and she forged away from the schooner, headed out to sea and disappeared in the darkness without a soul on board. The next day the schooner brought the men to the city. The same day the skipper of the fishing schooner Daboll saw a strange vessel beating about wildly approximately fifteen miles south of Squam. He ran down to her, recognized her and thought something serious had happened on board. He kept close to her until she ran into the wind, when he boarded her and brought her to the city. The damage to the Enchantress was slight and the pilots who had abandoned her were greatly surprised when they sighted her coming up the bay.

PILOT BOAT AMBROSE SNOW

Riding out a gale in the winter of 1892

THRILLING INCIDENTS

NOT only did the Sandy Hook pilots win fame through their bringing into or taking out of the harbor of New York the great sailing and steam ships plying between America's greatest seaport and the ports of the world, but there are innumerable instances where the Sandy Hook men played the parts of good Samaritans and life-savers. That there was much sentiment in the profession of piloting may be understood when the case of Pilot "Al" Dexter is cited. Dexter was one of the two pilots saved from the pilot boat James Gordon Bennett, when that craft was cut in two and sunk by the Hamburg-American Line's Atlas steamer Alene, on August 17, 1901, and three pilots and a steward lost their lives. It was not long after his dead mates had been buried before Dexter, unable to drive the harrowing sight of his drowning comrades from his memory, requested the Pilot Commissioners to accept his resignation.

The disaster to the James Gordon Bennett is one of the most harrowing in the annals of the New York pilot service. J. F. Hopkins, President of the New Jersey Sandy Hook Pilots Association, is still here to tell the story of this graphic occurrence. He swam around for several hours after the Hamburg boat had cut down the pilot boat, saw some of the luckless members of the pilot boat's crew drown under his very eyes, and was himself saved only because he kept floating until finally picked up by a rescue boat that happened to go back to the actual spot of the disaster, although believing that the place of the collision and sinking was half a mile farther along because the Alene had carried the wreckage of the rammed James Gordon Bennett fully half a mile by the force of the blow and her own speed.

Incidentally it might be recorded right here that Frank P. Van Pelt, President of the New York Sandy Hook Pilots Association, and chairman of the executive committee of the two combind associations, also went through a number of accidents and disasters, and had several perilous adventures during his pilot service. On the pilot boat Isaac Webb No. 8 he was shipwrecked on the Rhode Island coast, where the boat became a total loss. He was washed overboard from Columbia No. 8, being unconscious for four hours, and he was on the Enchantress when that pilot boat collided with a schooner off Sandy Hook. When the steamer Santiago struck and sank the pilot boat J. F. Loubat No. 16 Captain Van Pelt was one of those rescued with difficulty. The two presidents, therefore, hold their positions by reason of severe and strenuous duties, well performed, and both have the unqualified esteem of every New York and New Jersey pilot in the service today.

On the evening of September 29, 1901, Thomas F. Murphy, who had been a pilot since the late '50s, took his turn at the rail when the steamship Allianca came up near the lightvessel and stopped for a pilot. Murphy had complained that he was not feeling well, and some of his fellow pilots had urged him to get into a bunk and skip his turn on duty. But the veteran was obdurate and insisted that he would stick to the rules. He brought the Allianca to a safe anchorage off Quarantine that same night, and then went to a stateroom for rest. He never left the ship alive, and the next morning his body was taken ashore and to his home in Brooklyn.

Thomas Shields, for twenty-seven years a pilot, left the steamship Talisman outside of Sandy Hook and got safely into the yawl that was to take him on board the pilot boat New York on the afternoon of December 14, 1907. A stiff gale was blowing at the time, and the veteran navigator had been chilled to the bone on the bridge of the freight steamer which he had seen safely past the Hook. A sea filled the yawl, and a second sea capsized her as she was nearing the New York, which was lying to windward of the outgoing steamer. The three men in the yawl including Pilot Shields, with the two apprentices handling the oars, were thrown into the sea. All caught lines thrown to them from the New York except Shields, who was too much hampered by heavy clothing and the thorough chilling he had been subjected to on the Talisman's bridge, and who could not move to save himself. He was lost notwithstanding the superhuman efforts that were made to save him.

Another who sacrificed his life in the course of his duty was James H. Van Pelt whose father, also a Sandy Hook pilot, had also been drowned on duty. James H. was a cousin of Frank P. Van Pelt, now President of the New York Sandy Hook Pilots Association. The younger Van Pelt was struck on the head by the gunwale of the yawl that was placing him on board a tank steamer on Sept 19, 1915, and was dead when his limp body was tenderly lifted back into the yawl. The fatality in his case happened just before dawn, and was due to the darkness that prevailed when the veteran attempted to board the incoming oil-carrier.

THE ROMER'S LONG VOYAGE

IN THE annals of the piloting activities in New York Harbor there is probably no better illustration of the seaworthiness of the pilot boats used by the brave guides around Sandy Hook than the story of the trans-Atlantic voyage of the William J. Romer in February, 1846. There was a lot of excitement in New York just before February 6, of that year, when it became known that the Romer, a seventy-foot sail craft, was to set sail for Cork. The pilot boat, commanded by Captain James McGuire, as navigator; John R. Wilkes, mate; James Connor, second mate; both of them Sandy Hook pilots; Marshall Green, cook and steward; George Colton, James McLeslie and Edward Fryes, seamen; and James E. Johnson, boatkeeper and apprentice pilot, a cousin of Josiah Johnson, for many years a Sandy Hook pilot. There were two passengers on board the Romer, one of them an attache of the British Legation at Washington and the other a special agent of the State Department. Extracts from the log of this eventful voyage of the Romer form a prized souvenir among the records of the Sandy Hook pilots. Says the log:

"February 6, 1846. As we passed out Sandy Hook the big packet ship Patrick Henry was just astern of us and we hoped we might beat her on the run across. The wind was strong N.N.W.

"12th. Experienced our first setback in a strong easterly gale. Hove-to under a reefed main storm try-sail. Shipped a sea which carried the binnacle overboard. Blowing a hurricane and our chances on keeping afloat slim. Gale abated, wind shifted to west, made sail the third day.

"18th. Shipped a heavy sea which tore away part of cockpit. Running before it with great danger of being 'pooped' or broaching to. Here is where the Patrick Henry is getting the better of us.

"20th. Lay-to with a drag out, blowing a hurricane and a tremendous sea running.

"22nd. Just before noon lashed the captain to the mainmast, where he succeeded in getting the sun for the first time in several days. Lat. 43.28 passed a bark under close reefs heading west.

"24th. While laying-to about 7:30 P. M. a squall from the N.W. struck us and buried the little craft to the hatches. For a few minutes she hesitated to right or remain over. When she did right one big green sea enveloped her but she shook it off. A little later it moderated, and in wearing ship a heavy sea "pooped" her, nearly washing the man at the wheel overboard. Then she broached to and we thought that was the end of the Romer, but it wasn't to be.

During this gale we lost our drag with sixty fathoms of hawser, the square-sail boom and yards and two pigs of iron attached.

"27th. On the afternoon of this day the gale of three days subsided and with a fair wind cracking on we soon forgot past dangers, while the little craft skimmed the dark waters like a stormy petrel on our course to the eastward.

"March 1. We passed and spoke the packet ship St. Patrick from Liverpool for New York, the second vessel seen on the passage.

"4th. For the first time during the voyage a dry spot was visible on the deck.

"6th. At 4:30 P. M. made the Skelly Rocks bearing N.N.E. dist. 18 miles and at 11 P. M. made Cape Clear light 16 miles distant.

"7th. At 9 P. M. pilot boarded us and took the Romer into the harbor of Cork, three days after the Patrick Henry arrived at Queenstown, after a voyage across the Atlantic that could not have been more tempestuous, but the Romer survived it."

It is interesting to note that the valiant little pilot boat turned about exactly six days after arriving at Cork and left that port on March 13, regardless of the ominous date, for New York. On the return she took the southern course, reducing her time of passage two days, making the distance from Cork to New York in exactly twenty-eight uneventful days. It was the Romer that blazed the way, 1846, for the larger and more famous America, in 1851. Both boats were built on pilot-boat models and the America, challenger for the cup that has remained with us ever since, was navigated by Captain "Dick" Brown, also an experienced Sandy Hooker. The Romer, after making her famous round trip, resumed her work as a pilot boat and continued in that capacity for many years.

PILOT BOAT WILLIAM J. ROMER

Which made a round trip in 1846 from New York to Cork, Ireland, in 64 days, including a six-day stop at Cork

YACHT AMERICA

Winner of the first international yacht race in 1851. Sailed to victory by Captain Dick Brown, a Sandy Hook pilot

AMERICA SAILED BY A PILOT

A FAIRLY good illustration of the Sandy Hook pilot's expertness in navigation is the record of Captain "Dick" Brown, one of the old school pilots, whose fame spread all over the world when he took the yacht America overseas to bring back the cup that has remained as the America Cup throughout the years since August 22, 1851. There are no longer those alive who knew Captain Dick. Quoting from the New York Tribune some years back, just before the Valkyrie and Vigilant competed for the America Cup, with the usual result, we read that "a pilot's career affords valuable practice for developing sailing talent." The constant and varied handling of miscellaneous craft is productive of skill not to be otherwise obtained. The pilot thus becomes a ready sailing master of either fore-and-aft or square-rigged vessels. But few remain of the old-school pilots who, in former times, had to guide nearly every vessel between the "Hook" and clear to the wharf, aided only by wind and sails. Latter day pilots are necessarily prime sailors but their comparative duties are considerably modified by the better system of lights and other warning devices and the help of powerful sea-going steam tugs.

"Brief intercourse with old-time pilots soon discloses the sentiment which prevails among them for the man who obtained great fame while a member of their fraternity. The elder pilots affectionately recall his constant good nature, untiring generosity and also the modest estimation he placed upon his vast skill. The writer (Captain Summers, the famous yachting expert), who knew him long as a citizen and neighbor, never heard him allude to his great achievement over the English yachts with the least emphasis. He would converse quietly on the subject, but his remarks were chiefly brief responses to questions, and his descriptions were usually summed up in: 'But, you see, we had a good boat.' He was, of course, personally gratified with his victory but in his sturdy, off-hand way, he seemed specially pleased because he had taken part in a success which so delighted his countrymen.

"According to those who were professionally associated with Captain Brown, he had a marked peculiarity of close supervision of details on shipboard on all occasions. The least appurtenance of a vessel in his charge had to be promptly put and kept in working condition, while soundness of standing rigging, freedom of running gear, intact sails, trustworthy spars and appropriate distribution of ballast were always considered on a strict principle of 'better be sure than sorry.' Many incidents of his steadiness of nerve and ingenious resources in overcoming adverse contingencies in a con-

test are yet spoken of by the diminished group who were his early companions and had the opportunity to witness his exploits during his life. It was his custom to personally select every man for his racing crews and the best sailors were always ready to accompany the kindly, unostentatious chief who, if it became necessary, would throw off his coat and lend a hand to practically explain his maneuvre." Such was the estimate of Captain Summers of one of the best-known Sandy Hook pilots of his day and there is no question but many others of the valiant Sandy Hook complement are equally expert navigators.

Captain Dick Brown, by the way, followed his profession as Sandy Hook pilot for many years following his return with the America. He died as the result of exposure on a trip off Sandy Hook when his feet became badly frost-bitten, causing an infection which proved fatal to the famous old navigator.

An interesting account of the perils of the pilots' work is that in the old New York Sun, back in June, 1896, some six months after the old sail pilot boats were retired and the new system of steam pilotage was inaugurated at this port. Twenty-four pilot boats were discarded during the winter of 1895-1896, some of them being converted into fishing boats, others into yachts. Half a dozen of the old-time sailing boats were retained for cruising off the New Jersey Coast as far as Barnegat and along the Long Island coast as far as Fire Island but these, also, were withdrawn within a year or so after the fast steam pilot boats were put in commission. The days of tussles with cross seas and gales passed with the passing of the old sail boats for the Sandy Hook men and the exposure to cold, sleet and snow was greatly minimized when the steam pilot boat was assigned to a station close to the Scotland lightvessel. At the approach of a storm it was the practice of the old sail boats cruising close inshore to run in behind Sandy Hook and find a safe harbor except when the conditions are similar to those of the blizzard in March, 1888, when three pilot boats drifted ashore on Sandy Hook beach and two were abandoned in the ice in the Horseshoe. Each pilot takes his turn at the service now and is on board a pilot boat, cruising on the stations, not much longer than three days. The offshore service years ago sometimes compelled a boat to be at sea two weeks, the service requiring staunch, seagoing vessels, that became interesting features in the annals of this port.

JAMES D. M. BEEBE

Son of Theopholis Beebe, one of the first New Jersey pilots. Captain Beebe served 55 years as a Sandy Hook pilot

FOUNDERING OF PILOT BOAT EDWARD COOPER

December 25, 1892

Crew rescued by S. S. Marengo of the Wilson Line

FOUNDERING OF THE EDWARD COOPER

LIKE many another pilot boat the Edward Cooper No. 20, after figuring in the work of salvage and rescue for some years, fell victim to the sea's fury. Her doom came, strangely enough, on a Christmas morning, a morning that was far from being one of "peace on earth" for the intrepid souls who were outside Sandy Hook in the course of their sworn duty on December 25, 1892. The Edward Cooper had been out a week, cruising far out to sea, waiting for incoming ships. A southwest gale had been raging all night when, at five o'clock in the morning, Pilots Thomas Marks and John Hammer decided that they had been lying to in the gale, on the starboard tack, long enough. They waited for the sea to moderate sufficiently so that they might wear around to the port tack.

It was while they were trying to get into a more favorable position with the gale that the wind suddenly shifted to the northwest and when those on the Edward Cooper made frantic efforts to steady her and hold her to the gale a big sea came over the starboard quarter, with the trim pilot boat a practical submarine as the waters rushed over her deck. The main boom was carried away by the tremendous smash of the sea, breaking the mainmast off at the deck. The fallen stick was held to the boat by the steel cables that connected it with the forestay and in the great sea that was running, with the pilot boat out of all control, the task of lashing the broken mast and preventing it from doing further damage to the boat as well as endangering those on board, was no easy matter.

All hands—there were nine men on the Edward Cooper, including the two pilots—worked like Trojans to hold the fallen mast in place, and then to wear around on the port tack, which would have eased the dismantled pilot boat and given those on board some measure of control. But the fallen mainmast broke away from its make-shift lashings and, swinging suddenly around, cut the foremast off ten feet from the deck.

By dint of superhuman effort, their clothes encrusted in ice, as was the deck and every particle of wreckage of the broken masts and stays, those on the Edward Cooper finally succeeded in bringing the pilot boat around to the port tack and in clearing away some of the wreckage that was threatening every moment to swamp the Sandy Hook boat. First the thick layer of ice had to be chopped away, the ice forming almost as quickly as it was removed, and then the heavy timbers and rigging stays had to be cut through. This, with the deck so slippery that every moment the workers were at their task threatened death, was hard and desperate work.

Not one of the nine could make a move towards attracting attention of a passing vessel if, indeed, they could have attracted one, for snow was falling so heavily that all about the struggling pilot boat crew seemed to be an impenetrable fog. So the two pilots and the seven men of the Edward Cooper's crew labored at the wreckage, out of which they finally fashioned a drag, or a sort of sea anchor, which tended to hold the derelict little schooner more steadily in the heavy sea.

Another danger that threatened the pilot boat's complement was the foundering of the little vessel by reason of the great hole that had been made in her deck, clean down to the keel, as the foremast came tumbling down. Everything was filled with salt water and quickly encrusted with ice. There was not a drop of water to drink on board that had not been contaminated by the sea and the same held good with the provisions.

For two hours—the longest two hours in the life of Captain Marks, who is still on active pilot duty—those on the Edward Cooper strove to keep their craft afloat, hoping that some vessel might, after the storm subsided, come their way and effect a rescue. At the end of those two hours every man on board was at the point of collapse from exhaustion. None could move about except with the greatest difficulty, owing both to the chilling grip of their water-soaked clothes and the weight of the encrusting ice over their outer garments.

Then, at seven o'clock, came a sudden rift in the snowstorm. As the nine men looked up from their work of self-preservation on the Edward Cooper's deck, they saw not half a mile away, the steamship Marengo, a freighter, bound for England. Those on the Wilson Line vessel saw the Edward Cooper as quickly as those on the Edward Cooper sighted the Marengo. The Marengo's captain "spoke," the derelict pilot boat at once, setting his signals to show that he was preparing to come to the pilot boat's rescue without delay. Signalling as best they could, the pilots told the Marengo's commander, that the Edward Cooper's two life-boats were out of commission. One had been smashed completely while the other, the transfer yawl, had been cracked in several places by the seas that broke on deck and by the swinging about of the derelict masts.

The Marengo lowered a life-boat with a volunteer crew which managed to get away and, after several hours' work, transferred seven of the Edward Cooper's company to the Wilson liner. Captain Marks and a sailor were left on the Edward Cooper after the second and last trip of the Marengo's life-boat, when the snowstorm set in again as dense as ever and all sight of the Marengo from the

pilot's boats deck and of the Edward Cooper from the bridge of the Marengo was lost.

Pilot Marks feared that, before the Marengo's boat could make another trip and take him and his sailor companion off the Cooper, the pilot boat would founder, as she was settling lower and lower in the water. So he and the sailor plugged up the cracks in the damaged yawl as best they could with what offered at hand in the way of rags with which to do the plugging, and managed to get the damaged yawl away from the plunging wreck. First, however, they poured kerosene over a portion of the dismantled Cooper and set fire to her—a brave thing in itself for they were not then sure that the yawl would not be smashed against the wreck and make it necsary for them to cling longer to the derelict schooner.

But the yawl got away safely and Marks and the sailor rowed as they had never rowed before and probably never will row again. Another rift in the storm and they were able to make their way to the Marengo, but it took nearly an hour of maneuvering before the yawl could be brought alongside the steamship without bringing her up with a smash that would send Pilot Marks and his companion to their doom. The two last survivors of the Edward Cooper had hardly gripped the rope ladder that hung over the Marengo's side when the cracked and crushed yawl they had used sank from sight, almost under their feet.

It is characteristic of the pilot's viewpoint that the one outstanding feature, in the minds of the Edward Cooper's survivors, of this particular Christmas Day's frightful experience, was *not* the foundering of the Edward Cooper and the narrow escape from death of all of her company, but the fact that it was Christmas Day and that they did not miss their Christmas dinner! They enjoyed that meal on the Marengo, where they were honored guests, of course. To still further carry out their viewpoint of the whole affair, they told afterwards how they had been transferred one week later, on New Year's Day morning, to the tank steamer La Campagne, bound for New York, on which vessel they had their New Year's Day dinner so that, notwithstanding the slight incident of Christmas morning, they had not missed their holiday meals. It is this viewpoint that, perhaps, best illustrates the character of the Sandy Hook pilot. Dangers are nothing to him, narrow escapes may be discounted as much as you like, but the missing of a Thanksgiving, Christmas or New Year's dinner in the safety of his home or the safety of some vessel, be that a pilot boat or steamship, is something really worth being entered in life's log!

PILOT BOAT SIGNALING A LINER AT NIGHT

VOICES FROM THE PAST

TIME and again a voice speaks as if from the grave in the history of the Sandy Hook pilots and their splendid fleet of little sailers before the days of steam pilotage. In 1873 Abraham Jones, Josiah Johnson, Frank Penay and Louis Samson built the Edmund Blunt No. 2, which did her full share of the work of piloting during the intervening years between her launching and the great blizzard in 1888. Then she went ashore in the blinding snowstorm of March, that year, on the Long Island coast. Abraham Jones had been a pilot at Sandy Hook since 1851 and was in the ill-fated Columbia when that pilot craft was cut in two by a schooner in the late sixties. With Johnson, Penay and Samson, he built the Edmund Blunt and remained in her until his death in 1881. The Blunt, upon the advent of steam in the pilot service, was sold along with most of the other sail pilot boats. A few months ago Chauncey H. Jones, son of the former veteran Sandy Hook pilot, in making a pleasure trip to the West Indies, came upon the little craft upon which his father had cruised the waters outside of Sandy Hook. The former Edmund Blunt is now doing ferry duty between several of the smaller islands of the West Indies group, a motor having been placed in her since she was purchased out of the New York pilot service. She appeared as staunch as when the elder Jones sailed in her during the old piloting days and undoubtedly will, barring accident, do long service in her foreign surroundings.

Captain "Dick" Brown who, as is told elsewhere in this history, was picked from the roster of the Sandy Hook pilots to sail the yacht American to victory in the first cup challenge race at Cowes, received a fine pair of marine glasses from Queen Victoria about a week after the historic event in 1851, upon the occasion of a five-hour sail on the America enjoyed by the Queen, the late King Edward (then Prince of Wales) and a favorite lady-in-waiting to the Queen. This relic of the first America Cup race is the property of a New Yorker, R. A. L. Brackett, Captain Brown's son-in-law. The famous pilot who won the America cup for us used the glasses for a long time after his triumphant return from England, in his work as Sandy Hook pilot.

After their retirement from pilot work the Sandy Hook pilots have seldom undertaken other activities, especially not activities on land. Old Nathan Wood, still alive and active today at eighty-six, made the cryptic remark to the writer that "a sailor can never make a good farmer." Old Mr. Wood tried it, so he knows. He went through all kinds of weather and all manner of accidents but was unable to stick to his job as pilot until he had done his full

duty, *i.e.*, to bring the vessel under his care safely into port or safely out of it. But when, upon his retirement, he essayed the role of rustic on a quiet farm near Rutherford, New Jersey, he found he could not do his work at all after making the acquaintance of some poisoned ivy on his hand. Disgustedly he turned from his bucolic labors with the remark: "Give me seaweed instead of this land stuff. Seaweed never poisoned anybody."

Occasionally, the pilots would play, but not often. Their play would take the form of racing their swift and graceful vessels in regattas of their own or as entries in such events along the Atlantic Coast. So it was that the pilot boat T. S. Negus No. 1 won a notable victory over her competitors at the famous Cape May Regatta in 1873, one of the greatest local yacht racing events along our coast for schooners of the smaller class.

NATHAN WOOD

One of the oldest pilots in years and in point of service when he retired in 1917 at the age of 82

WAR SERVICE

WHEN the United States declared war upon Spain, in 1898, President McKinley had at his disposal one hundred and fifty of the most experienced pilots on the Atlantic Coast as a patrol and piloting force for the American Navy. Of this total a large percentage represented the complete personnel of the New York and New Jersey Sandy Hook pilots. The steam pilot boat New York, then in service but a year or so, was promptly offered to the government by the Sandy Hook guides as a scout ship, with pilots hereabouts all of them eager to serve as government pilots or as scouts on the ships of the navy sent to Northern waters to watch the harbors and the unguarded coast stretches. Spain's efficiency as a naval power was not then so well known in the United States as it was after the battle of Manilla and there was much speculation as to how our extensive coast line and our numerous important Atlantic harbors were to be protected. The fact that Germany, for one, seemed anxious to assist the Spaniards by selling them some of her fastest merchantmen as commerce destroyers added to the general disquietude and the offer from the Atlantic Coast pilots in general and from the Sandy Hook pilots in particular came as a welcome message to the public as well as to the government. The declaration that was signed by the pilots and sent to President McKinley said:

"We, the undersigned New York pilots (the New Jersey pilots concurring), realizing the usefulness to the Navy of the United States our steam pilot boat New York would be in case of war with Spain, do hereby authorize our Executive Committee to request the New York Pilot Commissioners to offer to the United States such aid and assistance as our knowledge of the coast from Nantucket to the Capes of Virginia makes possible."

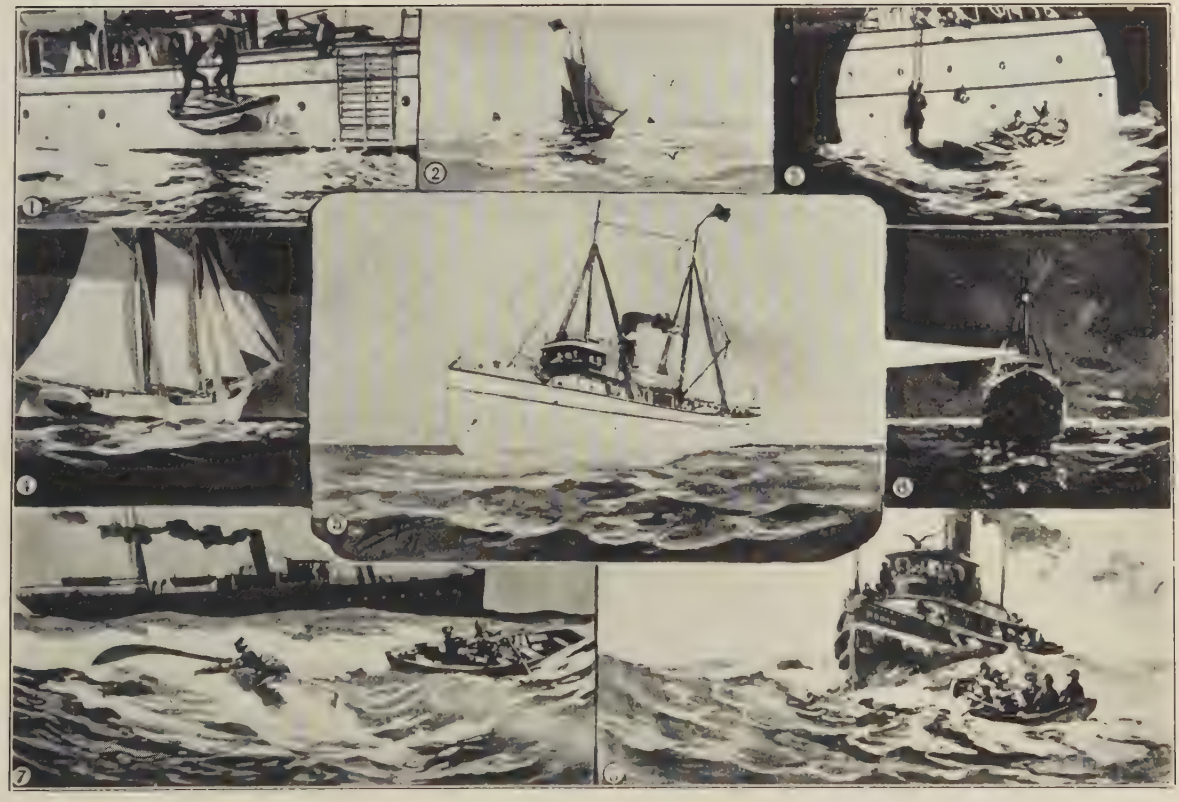
Equally to the point were the resolutions adopted at the time by the Manhattan Harbor of the American Association of Masters and Pilots, which quoted from General Grant's statement that, without the assistance of the pilots, the Civil War "would have been continued indefinitely" and that there was "no class of men who rendered better service or risked more than the licensed officers of steam vessels." In these resolutions General Grant was also quoted as having stated that "without the volunteer pilots it would have been impossible to have taken Belmont, Donelson, Memphis and Vicksburg."

Few realize the very great work that was done during the more recent world war by the men of the Sandy Hook pilot boats, those skilled seamen and navigators, who, despite the menace of German submarines along our shores, kept the sea clear far off Ambrose

Channel and safety brought our ships into port, says a writer in the New York *Evening World*, of March 22, 1919. It was their duty to guide all troop-laden transports and dynamite-laden merchantmen through the channels and out to sea, sometimes handling convoys of as many as sixty ships a day. Their work required an expert knowledge of the harbor and its constantly changing shoals. Throughout the war, when the customary lights could not be shown and the dozens of dynamite-laden ships, leaving port at night, crowding the channel like sheep, it was only the skill of the pilots that brought them through. A collison, any slight mishap, might have meant a repetition of the Halifax catastrophe. But the pilots knew their trade and there were no collisions. Far at sea the pilot boats keep their constant patrol. Their station is around the Ambrose Channel lightvessel, four miles southeast of the Ambrose Channel buoy No. 2, the offshore entrance to the channel. A pilot must be a cosmopolitan and must know a bit of every language, from low German to Chilian jargon. Every day he has a different ship and a different tongue. One day he will sip schnapps and eat smoergesbrod with the captain of a Norwegian tramp steamer while tomorrow his mess may be fried peppers, Bacardi rum, black Rio coffee and a long twist of Habana on a Spanish mail liner. For, wherever he goes the pilot is always an honored guest.

When the submarines were operating off the American coast and the great convoys were setting to sea weekly, the pilot boats kept on station, their lights extinguished (except running lights) and port holes closed and waited in the darkness offshore when only armed naval vessels, looking for raiders, dared to keep the seas.

A curious—although nearly fatal—occurrence may be cited as showing the risks the pilots took during those war days. A yawl from the station pilot boat had put out in order to place a pilot on the incoming converted merchantman Ryndam, then used by the United States as an army transport, when those on the Ryndam, mistaking the yawl for a submarine, opened fire on the little open boat. By great good luck the shots went over the yawl and the pilot finally was able to make the Ryndam in safety.



ON DUTY WITH THE STEAM PILOT BOAT NEW YORK

1. Dropping the yawl. 2. Auxilliary motor pilot boat Trenton. 3. Pilot boarding steamship at night. 4 and 6. Identifying a ship at night. 5. Steam pilot boat New York. 7. All in the day's work. 8. Pilots returning from station duty

SOME ITEMS FROM THE LOG

FROM the logs of the steam pilot boats New York and New Jersey (the latter since lost) are taken a few random records of assistance rendered from time to time by the pilots and their boats to vessels and crews while in distress within the Sandy Hook cruising grounds since the reorganization of the pilotage system on December 1, 1895. Many of these records deal with pilot boats other than the New York and the New Jersey, but the logs were transferred to the newer boats when these were placed in commission.

The pilot boat Joseph Pulitzer, for instance, rescued part of the crew and some of the passengers of the schooner Georgiana Young, who had abandoned their ship after it had stranded in an easterly gale, on Roamer Shoal, and who were adrift in an open dory in the lower bay. That was in July, 1897, and in the same month the pilot boat Alexander M. Lawrence rescued those on the Virginia sloop Fawn, of which rescue note is made in another part of this history.

A bit of Spanish War history is included in the phlegmatic paragraph in the pilot boat New York's log relating to the visit of the Spanish cruiser Viscaya to New York Harbor on February 20, 1898, which visit was intended by the Spaniards to duly impress Americans with the futility of going to war with Spain's mighty navy. "The Spanish cruiser Viscaya," says the New York's log, "after being delayed outside the bar on account of thick weather, unable to proceed, was convoyed by pilot steamer New York in that the said New York proceeded ahead of the Viscaya and successfully led her up to the Narrows, from where she proceeded unassisted to her anchorage."

On September 24, of the same year, the New York "fell in with the brig Ora well to leeward off the Highlands, wind northeast, increasing. Put pilot aboard of her and towed said brig from her perilous position to windward, from where she could fetch to a safe anchorage."

"February 26, 1899. Off Sandy Hook lightship, supplied British steamship Fernfield, outward bound, with marine glasses" is another modest entry in the log of the New York and the next month the same pilot boat recorded that she had "assisted during the night the U. S. S. Clearwater through the Gedney Channel with the aid of our searchlight, the Gedney's lighted buoys being out."

In April of the same year the New York's log records that it supplied the outgoing steamship Thomas Melville (British) with a sextant and on June 13, 1899, the New York records having taken on board from the pilot boat Hermann Oelrichs, the crew of the

German steamship Macedonia, which was sunk off Seabright, N. J., in collision with the steamship Hamilton and which crew had been rescued by the Oelrichs.

The United States transport Meade got in trouble outside Sandy Hook on November 6, 1899, and one hundred passengers and crew were taken off the transport and landed at Quarantine station by the New York.

On the evening of February 1, 1901, an accident occurred on the British steamship Circassian Prince, outside Sandy Hook bar, whereby her chief engineer suffered the loss of an eye. The New York took off the Circassian Prince's captain as well as the injured engineer, conveyed them to Quarantine, where the engineer's injuries were dressed by the doctors, and then conveyed the two men back to the steamship outside the Hook, from where the Circassian Prince proceeded on her voyage.

"At 1:35 P. M. (July 18, 1901) saw smoke issuing from the ship Commodore T. H. Allen," says the log of the New York. "We steamed alongside and found ship abandoned by her crew; we put five pilots and one apprentice on board and took hawser to the ship which, in the meantime, had drifted ashore. When hawser parted we went alongside, at 2:45 P. M. and later pulled her off and anchored her in Sandy Hook Bay, still burning. Pilot boat New York and several tugs kept pumping until 10:30 A. M. next day, when the fire was extinguished."

The pilot boats Ambrose Snow and Washington effected two rescues on September 8 and September 16, 1903, respectively, when the crews of the naphtha launch Chief (eight men) and an unnamed sloop (two men and a woman) were taken on board in safety. The Chief had become disabled in the lower bay and the little sloop had dragged her anchor in Gravesend Bay, fouled the pilot boat when the Washington was trying to effect a rescue, and had been pounded to pieces against the Washington's side.

Of much interest to those whose business or pleasure takes them to and fro past Sandy Hook is the significance attached to the odd and striking names by which many of the lightships, buoys, etc., are known. Among the several that are thus designated is the Scotland lightship, which was so named after the British steamship Scotland was wrecked after having been in collision with an American sailing ship, only part of whose crew was saved. After proceeding a little way into port, the Scotland sank in what is known as the Outer Middle. A lightship was placed over the wreck by the company that attempted and later did raise the sunken Britisher and when this was

accomplished the lightship was removed. Shipping interests petitioned the government to re-establish the lightship at this point and so came into being the Scotland lightship, named after the steamer that was sunk at that point many long years ago. Likewise came about the naming of Quickstep Buoy, near the West Bank, in the Lower Bay of New York Harbor. Many of the thousands of commuters and excursionists who pass the buoy during each year probably think that the danger signal was named after a popular form of dance, particularly in vogue years ago. As a matter of fact, the buoy commemorates the sinking of the American bark Quickstep, after being run down by a British steamer outward bound. After the wreck of the bark was removed, a bell-buoy was placed on the spot to mark a shoal that had formed there and it has ever since then been called the Quickstep Buoy.

A THRILLING RACE

Pilot boats Williams, Bateman and Blunt racing for the S. S. Rhein on a May day in 1890. Reproduced from a sketch made by an officer of the Rhein

RACING FOR A SHIP

IN the old days of sail, when each pilot boat operated independently, there existed the keenest rivalry between the various pilot teams, or companies, as they were sometimes called. Each pilot boat was owned by a distinct group of pilots, some of the boats attached to the New York Sandy Hook pilot service and some to the New Jersey Sandy Hook pilot service. It was always a question who would get to the incoming vessel first, and then it remained with the captain of the ship to select his pilot boat—although the captain generally picked out the boat that had come under his lee ahead of the others. As a result of this condition of affairs many a hotly contested and thrilling race has been sailed off Sandy Hook with victory meaning but the chance to earn their daily bread for the victors.

Typical of this feature in the daily life of the pilot of those days is the story of such a race in which the pilot boats Mary A. Williams, William H. Bateman and Edmund Blunt competed for honors on a beautiful morning in May, 1890, as related by an eye witness.

On this particular May morning the pilots out on cruising duty knew that several big ocean liners were nearing port and so the scouting was rather intense as a big ocean liner was a prize, from a material standpoint, well worth striving for. So, on board the Bateman, Williams and the Blunt, the three boats that happened to be in the same general location, some 200 miles outside of Sandy Hook, everyone was on the *qui vive* for the sight of a sail or a puff of smoke on the horizon. No racing yachts ever were more ready for the dash over the line than were these three pilot boats. Not a stray coil of rope or equipment of any sort remained on deck and every sail was ready to be adjusted at an instant's notice from the pilot commanding each boat.

At the rail stood the pilots on each of the three boats, binoculars in hand, sweeping the thin, wavy line that separated the sea from the sky on the horizon while the sun shone brightly on the ocean, with the sea still restless under the influence of the previous day's storm. A stiff breeze was blowing, which called for expert jockeying by the navigators on the three pilot boats so as to keep in a favorable position in the event of a sudden signal to start ahead. Taken all in all, no conditions could, from a weather standpoint, have been more perfect for a trial of speed and seamanship and, as later developments showed, it proved to be all of that.

Towards nine o'clock the lookout on the Bateman shouted that he saw smoke, many miles away. There was a hurrying of sailors on the Bateman's deck and in a jiffy her sails spread to the breeze and the graceful schooner was under way. She had not moved for-

ward a yard, however, before the same activity was evidenced on the Williams and on the Blunt. Although the Bateman, known as a tremendously swift sailer, had a slight advantage in the matter of start, the three pilot boats practically got off on equal terms, their common goal the fitful puffs of smoke that blew with tantalizing uncertainty over the horizon, towards the southeast.

From the moment that the three pilot craft got under full speed, their great masts bending under the weight of canvas caught by the breeze, it became a neck-and-neck race. Swiftly the trio of schooners cut gracefully through the sea, now rising with their bows far above the surface, then dipping into the trough only to rise again apparently more grimly determined than ever. As the contest was later described by the pilots competing in the race, it seemed as if the boats had become imbued with the importance of the struggle and each was striving to secure the lead, and hold it, quite as much as those on board who were guiding her.

It was an hour after the smoke had been first seen from the Bateman that the pilots on the three pilot boats made out the identity of the approaching vessel. She was the Rhein, a North German Lloyd ship, bound from Bremen to New York. As pilots cruised as far as 600 miles out of Sandy Hook in those days, there still remained the possibility that the race between the Blunt, Bateman and Williams might prove to have been in vain—for the Rhein might have picked up a pilot long before her smoke was made out from the Bateman and her two competitors. This contingency, however, did not prevent the navigators of the three pilot boats from making a try for the steamship and so they came, head-on towards the broad starboard of the Rhein, the wind from the northwest tipping the three schooners over on their starboard beams, with the brilliant sun high up in the eastern sky, forming a scene which, from the decks of the German steamship, must have been one of unusual beauty. In fact, one of the officers of the Rhein sketched the scene so effectively that he was able to give it with accurate detail to an artist ashore, later on, who in turn produced a picture that appears almost as flawless as a modern photograph.

Inch by inch the Bateman forged ahead in the splendid contest that held those on the steamship spellbound. On each of the three pilot boats a pair of glasses held the Rhein's navigating bridge—for the sight of a possible *confrere* of those on the Bateman, Blunt and Williams which would mean the uselessness of striving for the German ship's patronage. On the liner even the captain stood enraptured by the wonderful spectacle of these swift schooner yachts striving for the mastery.

Equal as the contest appeared to be from the deck of the Rhein, on the Williams and the Blunt they could more accurately visualize the situation and there was no doubt in the minds of the helmsmen of those two boats that the Bateman either was the faster craft or was being handled just a trifle more daringly than either of the others.

Finally the Rhein slowed down, which was the sure signal for those on the racing pilot boats that, as yet, the German had not taken on a pilot and that the prize would fall to one of the three little vessels that were racing to her side.

On came the three racers, gliding like silvery things over the waves at times and at others dipping gracefully, yet fearfully, in the watery abysses between the mighty seas.

Still in the lead, although by less than a dozen yards, the Bateman's navigator at last raised his hand in the direction of the Rhein's bridge. Up came the left arm of the German's captain, with a motion of the hand indicating that the Bateman pilot would be "taken on," and the race was over. Real sportsmen, however, were the defeated crews of the Blunt and Williams. As the two boats wore off in a graceful semi-circle their crews gave three rousing cheers as a tribute to the skill and daring that had won a hard fought and fairly-sailed victory. Such was the spirit of the craft.

PILOT BOAT RICHARD K. FOX

Named in honor of the famous sportsman

PILOTS CARRIED ACROSS

MORE so in the old days than now, pilots were often carried across the ocean because very severe weather made it impossible either to locate the "station boats" from outgoing ships or to attempt a transfer. This held good for foreign pilots who were brought here, having been unable to leave ship when out of a foreign port and so made an involuntary pilgrimage to the United States. Many of the Sandy Hook men "went abroad" without notice or intent this way, the news of their involuntary journey being brought home by one of their fellows. And, in the old days, that meant a long absence from home. Ships took longer to make the round trip and a Sandy Hook pilot's absence from his home station, after being carried across the Atlantic, often was a matter of six weeks or more.

The greater interest on this side of the Atlantic always lay, of course, in the foreign pilot who was carried across on the westward voyage out of a European port. Whenever such a thing came about the newcomer was heralded in the public prints for, as a general rule, it was the foreign pilot's first peep into America. The pilot would come as a guest of the ship's captain and go back with him the same way, remaining as the ship's guest during its stay in New York harbor. Just how this would work in the case of a pilot unable to leave his ship when on a vessel destined for a distant port, not a regular transatlantic liner but a "tramp" freighter is not in the records. Sandy Hook pilots have, in many instances, been carried across on transatlantic liners but one has never, as far as the records show, been carried beyond the Sandy Hook lightship on a freighter bound for the other end of the earth.

But being carried across the Atlantic and being thus forced to enjoy a vacation at the expense of the steamship company owning the vessel on which he was an involuntary passenger was, even with its loss of time, not one of the most severe hardships the Sandy Hook pilot could experience. On the way over and back again, as well as the time spent in the foreign port between the arrival and departure, the Sandy Hook pilot was the honored guest on board. Both in the old days, when the pilots worked in independent groups and today, when they pool their earnings of the combined New York and New Jersey Pilots Associations, such an involuntary absence would bring no personal money loss to the absentee, except that, in the old days, the particular independent group to which the absentee belonged would have one man less to work for that particular group and would, therefore, stand to lose some pilotage business.

Speaking of being carried across, reminds the writer of an interesting incident that befell Captain George Oldmixon wherein he narrowly missed a trip to Southampton as the involuntary guest of

Captain Mills, commanding the S. S. Philadelphia of the American Line.

On December 14, 1907, the same day that Theo. Shields lost his life as related elsewhere in this volume, Captain Oldmixon was taking out the Philadelphia. A terrific southeast gale was blowing and the air was so filled with the driven snow that one could hardly see a boat's length ahead except during those odd moments in a storm when everything seems to ease up for a spell to give the storm king a chance to get a fresh hold for a still fiercer blast. Going down Ambrose Channel the gale caught the ship so hard that great green seas repeatedly broke over her bows. It was one of the worst storms ever experienced off Sandy Hook. After getting his ship safely past the lightship out into the fairway of the sea, Captain Oldmixon began straining his eyes and sounding the ship's whistle for the New York—the pilot boat then on station duty—but in the thick weather he could not pick her up so after a time he resigned himself to an involuntary trip to Europe, and Captain Mills laid his course for England. A few miles further out, however, during one of the brief lulls in the storm, Captain Oldmixon sighted the New Jersey, a faint blur in the storm about half a mile to windward, which, unknown to him, was aiding the New York on station duty on account of the severity of the storm. Although the storm was still raging with unabated fury he ordered the Philadelphia hove to and signalled the New Jersey to take him off, much against the wishes and advice of Captain Mills, who told him it was suicidal to try it in such a storm. It proved to be quite a difficult matter for the New Jersey to maneuver into the proper position to effect the transfer but after a time the yawl put off from the pilot boat and safely reached the steamer's side. Donning a life preserver and fastening a quarter-mile heaving line about his waist at the earnest request of Captain Mills, Captain Oldmixon climbed over the ship's side into the bobbing yawl and started for the New Jersey. After a half hour's nerve-straining battle with the waves the yawl's crew brought her, ice-covered and half-filled with water, safely under the New Jersey's lee. With a parting blast from the whistles of the two vessels, and a hearty hand-clasp from his shipmates aboard the New Jersey, another one of the many thrilling incidents in the life of a pilot was closed.

PILOT BOAT RICHARD K. FOX

In port after a winter cruise in zero weather

PILOTS AS COAST POLICE

THE Sandy Hook Pilots became popularly known as the "coast police" through their efficient work in rescuing the crews of small craft and scows that had drifted out to sea. Just how many lives were saved in this way by the sturdy harbor mariners must be guessed at, for no complete record has ever been kept of the rescues. The items gathered and at hand are so numerous, however, that it would require many pages to chronicle them all in this brief history of the New York Harbor pilots.

A notable instance of this sort was the rescue of the crew of the little Virginia sloop Fawn, which foundered off Sandy Hook lightvessel on July 15, 1897, during a heavy storm. The crew of the sloop had been in sore straits until rescued by the men of the pilot boat Alexander M. Lawrence, on board of which was Pilot Connor, who brought word of the rescue to New York. The Lawrence had been on station duty off the lightvessel when those on board sighted the Fawn, shortly after darkness had fallen. The weather was what sailormen call "dirty," with heavy squalls of wind and rain and a great sea running. Seeing that the sloop was in a bad way, the Lawrence ran up within hailing distance and found that the Fawn was leaking badly and that the crew stood in need of instant assistance. The pilot boat put out a yawl and ran a line to the sloop and then, falling away when the line had been made fast, started into the harbor with the Fawn in tow. The Lawrence had not gone far, however, before a cry came from the sloop that those on board believed their little craft to be sinking. The pilot boat was brought into the wind, and, at the same time, the line parted. The fact that the pilot boat's yawl had been kept ready for instant lowering made it possible for two of the brave men from the Lawrence to get into it and pull away to the rescue of those on the Fawn without loss of time. Quick as were those from the Lawrence, the Fawn sunk before the yawl could reach her. It was hard going for the tiny rescue boat, for the tremendous seas all but swamped the frail cockleshell. There were three in the Fawn's crew, including the captain. The trio were taken out of the water just in time and then, when the yawl's lantern was knocked over as one of the rescued was being pulled into the boat, those on the Lawrence thought that the yawl had swamped and promptly a second yawl was sent out from the pilot boat, after the first. For nearly an hour the second rescue boat cruised about in the dark and the gale until those in her heard a faint call from the first yawl and finally all hands were safely transferred to the deck of the Lawrence.

As illustrative of the unselfishness of the pilot service the incident of February 5, 1903, when a tank steamer got into trouble outside the Hook, through a derangement of her machinery, may be included in this narrative. A tugboat was dickering with a barkentine for a tow from the lightship to an anchorage within the harbor when the steam pilot boat New Jersey megaphoned to the tugboat captain that a tanker was outside waiting for a tow and showing signals that she was not under control. To tow such a steamer in port might mean, especially to the towing concern in question, heavy salvage as well as big towing charges. The tug's captain promptly abandoned the barkentine for the more remunerative "prize" but was dismayed, upon reaching the disabled tanker outside Sandy Hook, to find that the steam pilot boat New York had passed a line to the oil-carrier and was towing her into the Hook. In answer to the tug captain's rather forcibly expressed objection to the pilot boat taking the tow, the pilots shouted back that the steamer had been found in distress and perish the thought that a Sandy Hook pilot should ignore that signal. "And we're not asking any pay for it, either!" came the semi-apologetic shout from the New York.

Similarly was the case, although somewhat sadder from the fact that a man had met with grievous injury on board the ship in distress, of the four-master Margaret, bound from Norfolk to Boston with a cargo of coal, handled by Pilot R. J. Waugh, from the steam pilot boat Sandy Hook. Mr. Waugh noticed a schooner at anchor outside Sandy Hook and, thinking she desired a pilot, went out to her in a yawl from the Sandy Hook. Instead, he found that the master of the schooner was hesitating at paying a very heavy towing charge into New York or a proportionately good price for having one of his men transfered to a hospital at Staten Island on a tug boat, the man having had his arm torn off in an accident with the donkey engine on board the schooner. With the pilots there could be no question as to what should be done so Pilot Waugh took the injured man in the yawl, transferred him as quickly as possible to the Sandy Hook, left an emergency yawl at the lightship until he could steam with all haste to the Narrows with the Sandy Hook and have the injured sailor put ashore and sent to a Staten Island hospital. And it is needless to say there was no question of transfer charge or anything else of the sort figuring in the transaction.

On still another occasion a woman who had been misdirected by a New York taxicab driver and taken to the wrong pier where she boarded the steamer Stockholm, bound for Sweden, instead of the

United States, which was bound for Denmark, was taken off the Stockholm when the pilot left that ship off Sandy Hook, transferred to the steam pilot boat where she was kept until the outgoing United States should come up, where she was to be placed on board with her sister and little baby, who were going abroad with her. When the United States came out of the Lower Bay she was halted by the pilot boat and preparations were made to place the woman on board of her when it was found that the sister and baby had not, finally, taken that steamer because of the absence of the member of the party who had gone to the wrong ship. So the woman was again placed on the pilot boat and brought to Staten Island that night. She had no money and was a stranger in New York, so one of the pilots took her to his home where she was cared for until she could communicate with her sister. In the meantime the pilots had made up a small purse for the luckless lady and she was finally sent on her way rejoicing.

SANDY HOOK LIGHTSHIP

Renamed Ambrose Lightship about 1907
Pilots delivering mail to the storm-bound keepers

BOARDING THE LEVIATHANS

WITH the mammoth Leviathan, Berengaria, Olympic, Aquitania, Mauretania, Rotterdam, Paris, Adriatic and the coming Majestic matters of small and unusual interest these days of gigantic undertakings, it is amusing to turn back the pages of modern marine history and to peruse what was written, a scarce twenty years ago, about the immense size of what are now considered but comparatively large steamships. "Hard to Board Ships" and "Pilots Find It More and More Dangerous to Reach Liners" are two headings over an article in the St. Louis *Republic*, in October, 1901, which says that "the immense size of the new ocean giant, the Celtic, has raised a serious question among pilots and steamship men generally." The article goes on to relate how the new Celtic is nine stories in height, five of which are above the water line and asks: "What interests the pilots is, How can they get up the side of this giant without the expenditure of enough energy to run a small sawmill for several minutes?" The climb is a hard one, says the St. Louis *Republic's* correspondent. Imagine scaling the bare side of a five-story building on a flapping, wriggling ladder of rope. It requires skill and strength, just how much of the latter is shown by the fact that, within a comparatively short time, two pilots have fallen dead of heart disease on the deck after making the climb. These deaths did not, of course, occur on the Celtic, the correspondent hastens to explain, saying there are other ships up whose "towering sides" it is an awful job to climb. Among these he named the Oceanic, Deutschland, Campania, Lucania and Wilhelm der Grosse. None of them, he points out, is as large as the Celtic, yet each was considered a giantess of the sea. "It is not easy to climb a short distance on one of these rope ladders" he continues. "The ships do not stand still like a horse. They pitch and roll. Pitch and roll number one sends the pilot swinging far off the side of the ship like a pendulum. Pitch and roll number two brings him back quickly and, slap! he goes against the iron plates of the ship. As most pilots are elderly men and inclined to fleshiness, the ascent of a big ship is not viewed with unmixed delight by them." In New York Harbor Alfred Buadier and John Canvin, pilots, paid with their lives for boarding big ships. In each case they had dropped dead almost on the instant that they reached the deck . Baudier had his hand outstretched to grasp that of the ship's captain, when he fell. Both had been suffering from heart disease and the violent exercise of climbing killed them. The time since then has seen great changes in the problems confronting pilots. Ships go out now with drafts that far exceed anything that had ever been thought possible. In 1899, when

there was pronounced agitation looking to the widening of the main ship channel at New York to 2000 and its deepening to 35 feet, well-informed shipping men said that there was no doubt that, in time, ships would draw from 28 to 29 feet regularly and that some few might even draw thirty feet. This was considered a daring prophecy but, in the year just ended, a maximum draft of 42 feet 6 inches was recorded in the Port of New York.

One wonders, when reading the foregoing effusion of twenty years ago, what the feelings of the Sandy Hook pilots must have been with the coming of the really big ships, with their sides half again as high as the puny sides of the Deutschland, Campania, Lucania, etc., and with ships drawing, not a measly thirty-two and a half feet but from 35 to 42 feet of water?

PILOT BOARDING A STEAMSHIP

Commanders of some of the larger modern steamships have provided safety belts for the pilots' use in rough weather

GRATUITOUS SALVAGE WORK

INSTANCES where owners were saved thousands of dollars in damage by the quick and efficient work of the Sandy Hook pilots and, perhaps, the total loss of their ships, are recorded in the New York's log. The first on February 2, 1903, when the Dutch tank steamer New York, inward bound anchored outside the bar at Sandy Hook and communicated with the pilot steamer New York, requesting to be assisted by the pilot boat to a safe anchorage, stating that the tanker's steering gear was disabled and that the steamship could not, therefore, be properly and safely steered. The New York thereupon took the tanker in tow and brought her into the Narrows. The owners sent the Pilots Benevolent Fund a check for one hundred dollars in recognition of the service the pilots had rendered their vessel. A similar action on the part of the owners of the ship in distress, but where the services rendered were far more vital and strenuous because the vessel calling for assistance had gone ashore in a dense fog was that of the owners of the American ship Susquehanna. This ship, in tow of a tugboat, had grounded on the Sandy Hook Bar in a dense fog. The New York put a pilot on board and then proceeded to float the Susquehanna.

On Sunday afternoon, November 13, 1904, at the height of a severe gale of wind from the north northeast, the pilot boat Hermit No. 8 fell in with the disabled motor boat Mildred, drifting to sea with five men on board. The Hermit sent her yawl over the side, rescued the Mildred's complement and then towed the motor boat to Princess Bay. That the rescue was a difficult one is attested by the laconic entry in the Hermit's log that the pilot boat, in making the rescue lost her jib and split her foresail.

The vivid story of a collision in which one vessel was ultimately sunk and her captain and mate's brave attempt to stand by their doomed ship is covered by just a dozen written lines in the log of the New York under the date of December 18, 1908. "On December 18, at about 4 P. M. after boarding the S. S. Esperanza, about a quarter mile south by east of Gedney's Channel buoys," says the entry, "we sighted the S. S. Catalone, sounding alarm signals. Spoke the steamer and sent our yawl and took aboard twenty-eight of the crew of the steamship Dageston, with which the Catalone had been in collision. At 7 P. M. we put the captain and mate and five men aboard the Dageston but at 7:50 sent our yawl for the five men again, the Captain and mate remaining aboard. We sent yawl over to Dageston at 8:20 and 8:50 suggesting we tow the steamer but the yawl returned each time with the captain's refusal. We stood by until 10:05 P. M. when the captain signalled us his ship was

sinking. We took him and the mate off, the last men to leave the sinking ship."

That the experienced Sandy Hook pilots do not always give of their expert knowledge solely to large sailing and steam vessels is shown by the entry in the New York's log of April 21, 1911. The New York that morning sighted a sloop off the whistling buoy, flying distress signals. Frank Cramer, a pilot, went aboard the sloop at 9:15 A. M., much in the same manner as he might have gone over to the Cunarder Mauretania, to assist the sloop in making a safe harbor, her power having gone awry. The wind was blowing a whole gale from the north-east with an attendant strong south-west current. The New York left the sloop in order to take a pilot off an outward-bound steamer and, while the New York was on that duty, the sloop, notwithstanding Pilot Cramer's expertness as a sailor, carried away her mainsail and was fast being driven by the gale to the Sandy Hook beach, both her anchors having gone by the board. The New York hurried over to the sloop as soon as she could and succeeded in taking off Cramer and the two men who had been on the sloop when she got into difficulties. The sloop had to be abandoned.

Saving the lives of the professional life-safers was still another task, seemingly, that fell to the lot of the Sandy Hook pilots. The same day that the New York rescued the two men from the sloop which Pilot Cramer tried to bring into the harbor, the big pilot boat sighted a Sandy Hook Life-savers' dory outside the Hook, three miles from the Scotland Lightship. The dory had saved a man off a scow which had gone adrift from her towing convoy and had, in turn, suffered a breakdown of her motor auxiliary. She was drifting and requested the New York to tow her into the harbor.

Innumerable instances of similar rescues are recorded on behalf of the Sandy Hook pilots, besides many other instances where the presence of the valiant sea guides at the entrance of the harbor has resulted beneficently for either men or ships. Helpful always, regardless of "what there may be in it" in the way of salvage, which is ever an important consideration on the part of many navigators when giving a helping hand in the way of a towing line to a ship needing assistance, the Sandy Hook pilots have, time and again, been the guardian angels of New York Harbor. Their mobility, especially, has been of value to those in need of succor, for the pilot boats have moved quickly to where they were needed and they were always within call of those whose mishaps occurred close to the harbor entrance.

It might be remarked here that so great had been the loss of life among the pilots during the years prior to 1897, especially during the blizzard, that the New York and New Jersey Sandy Hook Pilots Benevolent Association, of which Allan Beebe was and still is the secretary, found itself unable to meet the demands upon its treasury for burial benefits. It was this emergency that impelled the late James Gordon Bennett to arrange for a benefit performance at the old Herald Square Theatre so as to replenish the exhausted treasury of the Association.

FRANK P. VAN PELT

President of the New York Sandy Hook Pilots' Association and chairman of the joint executive committee of the New York and New Jersey Associations

UNITING THE PILOT SERVICES

WHERE, years ago, as has been explained, it was a practically free-for-all race between more than two dozen pilot boats for incoming ships, the systematizing of pilotage brought about a great and welcome change. Without a "station boat" close to the lightship at the entrance to the harbor it was often impossible to take off the pilot of an outgoing ship and it was, therefore, occasion for delay on the part of the ship while the transfer yawl could be located or occasion for a transatlantic trip for the luckless pilot. With the reorganization of the New York and New Jersey pilots, with sail pilot boats still in active service, a system of station boats was inaugurated whereby each individual boat was to do a certain amount of duty as "station boat." A heavy penalty was prescribed for an infraction of the rules regarding this and there was a penalty inflicted upon the pilots who did not report to the Association secretary all ships piloted by them during the previous forty-eight hours of duty. The regulations called for a day signal on the "station boat" of the jack at the foremast head and a night signal of a light on the jib-boom. The boat on station duty was compelled to carry, in a conspicuous place, from sunset to sunrise, a bright red under a white signal light and to remain on station duty until relieved. In this way pilots on vessels outbound were readily taken off the ships and transferred to the station boat, except in isolated instances where the weather was so rough that no transfer boat could have lived in the gale and the pilot was carried overseas as the guest of the ship which he had intended seeing safely on her way merely as far as the lightship. The last of the old-time pilot boats under sail to do station duty was the Alexander M. Lawrence Number 4, which was on duty when the new steam pilot boat New York went into commission. When the curtain was rung down on the old sail pilot boats there were eight New Jersey boats and twenty-two New York boats still in service. On November 30, 1895, there were 166 pilots on duty on twenty-nine sail pilot boats, covering the seas from New York Harbor as far as Cape Sable to the eastward and as far south as the Virginia Capes to board incoming ships. By June 21, 1896, twenty-four sail boats had been withdrawn, five of the old boats being retained to serve as emergency pilot boats or as auxiliaries to cruise around the lower Jersey shore. That was during the days that the chartered steamers Walter Adams and Alaska were in service, for the New York did not take up her station alongside the Ambrose Channel lightship until July 1, 1897. The five boats that were retained temporarily were the H. Oelrichs, A. Snow, C. H. Colt, E. F. Williams and Alexander M. Lawrence,

the Colt and Snow being sunk a few years later while still doing auxiliary duty as pilot craft.

Up to 1895, when the business of the New York and New Jersey pilots was united into one organization, the records available show a total loss of thirty-four pilot boats and the violent deaths of fifty-one pilots, besides a large number of apprentices and members of pilot boat crews, the injuries to a large number of pilots and others in the pilot service and the temporary disablement, through accidents at sea, of a very large number of the pilot craft besides those that were entirely lost.

There is a charm in the pilot's life and the pay in the service is good, but young men looking for a safe and soft future had better steer clear of the Pilots' Association. There are now about seventy on the waiting list. They are fine, sturdy young Americans, who know the test of a pilot and are not afraid to go through the rigorous training period. Today they are working in shops, offices and on vessels at sea, waiting to be called. When the pilots' committee has decided that a young man possesses the moral, physical and personal qualifications that will make him a good member of the Association and a good man to stick by, he is put in the boats. He starts as apprentice pilot, working twenty-four hours a day, getting one day off on shore every two or three weeks and being paid twenty-five dollars a month. The apprentices form the crews of the pilot boats. Every time a ship comes along they row the pilot over to her side. The yawl is put into the water some hundred times a day. Mostly it is a row of only fifty yards—sometimes they are forced to chase a ship a mile—whether it is 2 A. M., or blowing a howling gale, or in a hurricane sea jammed with ice flows. They never undress. Just turn in with all their clothes on, sleep a few winks till the next call, always with the yawl handy right alongside. And the call comes on an average once every hour during the night. In addition to this, the apprentices do all the work of steering, painting and cleaning ship. The apprenticeship lasts nine years, after which they can become pilots; but it is a training that makes men. The weaklings drop out and only men who love the hard, bitter life of the sea can face the prospect of nine years' duty at eight dollars a week. Picking up the pilot is always a feature of the transatlantic voyage. Long before land is sighted the first officer of the liner will hoist the S flag at the foremast as a signal that a pilot is wanted. At night he will shoot a "Very" star skyrocket to call the pilot boat. Then, far down the western horizon, where the glow of Ambrose Channel lightvessel flashes and fades in the sky,

one sees the answering flare from the pilot boat. Soon the gray yacht will glide alongside, dropping a yawl, and the pilot will climb the "monkey ladder" over the ship's side, step into the circle of passengers gathered on deck, carying the city papers in his great-coat pockets and there is always a scramble for the bundle of real shore news.

THE NEW YORK, FIRST STEAM PILOT BOAT

Built for the Sandy Hook Pilots' Association by the Harlan & Hollingsworth Company in 1897. Designed by A. Cary Smith

FROM SAIL TO STEAM

THE pilot service in New York Harbor was revolutionized when the old sailing boats were discarded and the modern steam pilot boat New York was placed in commission. First, however, the pilots used the Walter Adams and the Alaska, both of them fishing boats with steam power, which were chartered pending the construction of the modern pilot boat New York and her expected consort, the New Jersey. The Walter Adams had a tonnage of 175 net and a length of 133 feet and the Alaska had a net tonnage of 121 with a length of 141 feet. The pilots also used the fishing steamer Trenton as an auxiliary cruiser. For a time several of the old-time sailing boats were kept in the service for emergency and cruising duty outside Sandy Hook. With the placing of the New York in commission in 1897 the Adams and Alaska were returned to their owners and went back into the fishing trade. The New York was designed and modelled by A. Cary Smith for the New York Sandy Hook Pilots' Association and her launching was a great event in maritime history on the Atlantic coast. The new steamer was sponsored by Marie Morse, daughter of the president of the Harlan & Hollingsworth Company, that built the boat at Wilmington, Delaware. Among the large number of those present at the launching ceremonies, on March 18, 1897, was a large delegation of the New York and New Jersey pilots and members of their families. The New York carries sixteen pilots, besides a regular crew comprising a captain, three mates, three engineers, a steward, a cook, two waiters, four firemen and six sailors; the captain, mates and sailors being pilot-apprentices. It might be stated here that the last three years of the apprentice's services are devoted to the duties of watch officer (captains or mates), with the pay slightly raised from the original twenty-five dollars monthly, during these last three years of the men's apprenticeship. The vessel is 154 feet in length over all, has a 28-foot beam, outside measurements, and a depth of 20 feet, with a mean draft of 13 feet when in seagoing trim. She is constructed wholly of steel and fitted with engines of 1000 indicated horsepower. The New York is a powerful vessel, a cutter under water and a lifeboat above water, as well as being a magnificent steam yacht inside. She has two working boats, or yawls, which lie on deck, one on each side of the engine-room skylight, just abaft the extended iron deckhouse, which contains the hoisting engines to lift them clear over the side and place them in the water, ready manned, in all sort of weather.

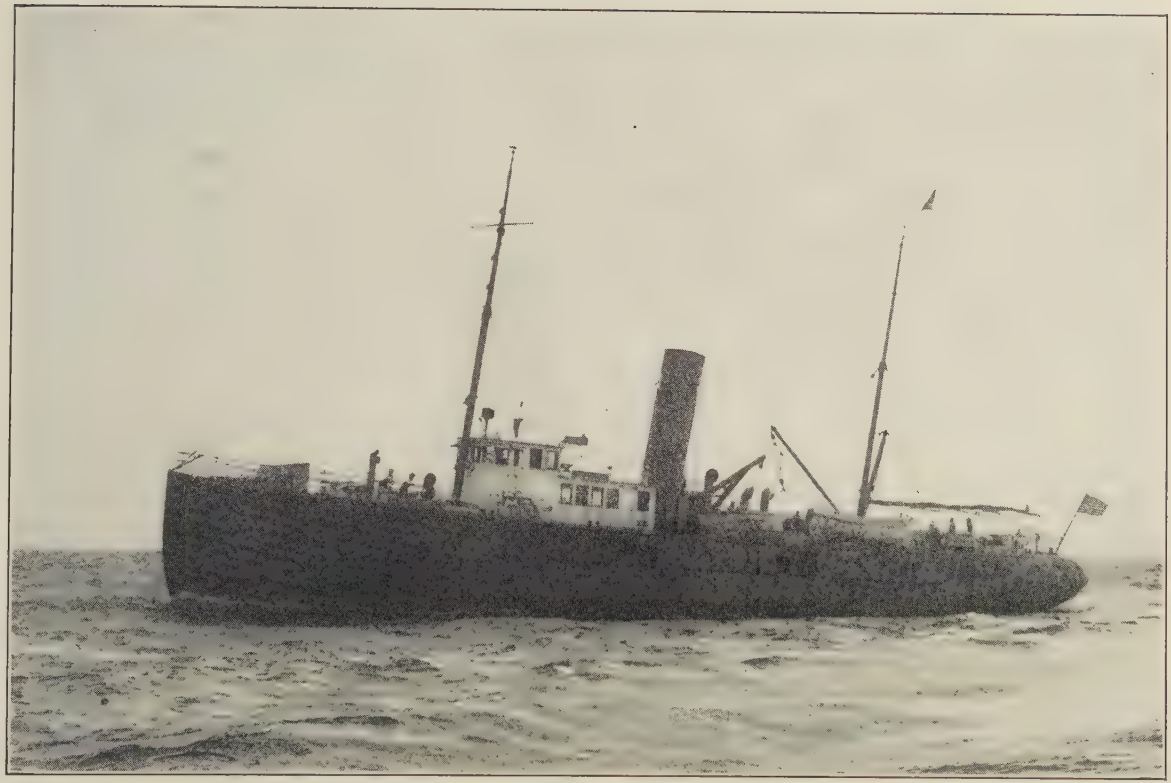
As additional proof of the great efficiency of the pilot service today it must not be forgotten that the steam pilot boats New York and Sandy Hook can put their yawls over the side and into the

water, ready manned, in exactly five seconds, truly a wonderful accomplishment in latter-day life-boat launching.

These derrick booms, quite distinct, on the starboard and port sides, are attached to the mainmast. There are two other life-boats, hung on davits, one on each side of the funnel. Five sails are fitted —four boomless staysails and one jib—not for use as sails in the usual acceptance of the word but to steady the New York in the many different and ever-changing circumstances that such a vessel will encounter during her active service. Immediately forward of the New York's funnel, in the iron deckhouse, is the "galley" or kitchen. Then comes the officers' mess and, ahead of this, directly beneath the pilot house, the captain's and mate's rooms. These quarters, by the way, are not surpassed in comfort and complete appointment by any officers' rooms on any ship of whatever kind or size. On top of the pilot house is a search-light, manipulated from within the pilot house and capable of being placed in any position. The after deckhouse, also of iron, contains a stairway leading down to the two saloons and four double berths for pilots. There is, besides, an excellent smoking room shelter. There is a three-foot passage on the starboard side of the New York, extending the entire length of the boat, making means of communication from the galley to the saloons, forward and aft, and to the pilots' rooms easy in the roughest weather. These rooms, forward and aft, have two berths in each. The engineers' rooms are forward of the forward saloon, with quarters for the firemen adjoining. The rest of the crew are berthed in the forecastle. Luxurious baths are provided on board the New York and the men have roomy lockers all through the vessel.

STEAM PILOT BOAT NEW JERSEY

Built by A. C. Brown & Sons of Tottenville, Staten Island, in 1902. After not quite twelve years of service she was run down and sunk off Ambrose Lightship, July 10, 1914, by the S. S. Manchoneal



STEAM PILOT BOAT SANDY HOOK

Formerly the steam yacht Privateer. Purchased from Mr. R. A. C. Smith for a nominal sum to replace the New Jersey. Built by Lewis Nixon at the Crescent Shipyards, Elizabeth, N. J., in 1902

THE SECOND STEAM PILOT BOAT

WITH the New Jersey (since sunk) the Sandy Hook pilots got their second modern steam pilot boat. She went in commission on November 12, 1902. The New York and the New Jersey Pilots' Associations now having united, the New Jersey and her sister pilot boat, the New York, jointly took up the task of doing full pilot duty at the lightship at the entrance to the harbor, using several of the old sailing pilot boats only for emergency. The New Jersey was a staunch craft—a credit to her Tottenville builders, A. C. Brown & Sons. Her machinery was installed by Alexander Miller and Brother, Jersey City. The New Jersey was as complete in her appointments as the New York and, in addition, was so constructed that she could be used as an ice-breaking ram during severe winter weather. She had a length of 157 feet over all, a beam of 28 feet and a depth of 18 feet 6 inches and drew 14 feet of water. She was, therefore, just a fraction larger than the New York, except in the matter of depth.

It was on July 10, 1914, in a dense fog, that the steamship Manchoneal, a rakish little fruit carrier, rammed the New Jersey off Fairway whistling buoy, at the intersection of the old (Gedney) and the new (Ambrose) channels. All hands on board the New Jersey were saved but the splendid pilot boat was doomed to end her brief career at the bottom of the waters of the lower bay. She sank almost immediately after being cut down and those who had been on board—her full complement besides a dozen pilots—had little opportunity to save anything except their own lives.

By a strange working of Fate, a man who has done a great deal, not only for the merchant marine of the United States, but who also figures in history as the father of our first modern battleships, was brought into the lives of the Sandy Hook pilots through the purchase, by the latter, of the steamer Sandy Hook, to replace the lost New Jersey. The Sandy Hook was built in 1902 at the Crescent Shipyards, Elizabeth, New Jersey, by Lewis Nixon, famed as the designer and constructor of the battleship Oregon and other fighting vessels of the American Navy. The Sandy Hook was built as the Antice, a magnificent steam yacht, of 361 gross tons, a length of 168 feet 6 inches, a beam of 24 feet 4 inches and a depth of 12 feet 6 inches. She has 1,000 indicated horsepower and is in every way a splendid vessel. The Antice later was renamed the Privateer and came under the ownership of R. A. C. Smith, one time Dock Commissioner of the City of New York, a man who has always had the interests of the Port of New York at heart, and by him was used as a private yacht. Mr. Smith, ever an enthusiastic friend of

the Sandy Hook pilots, placed a merely nominal price on the Privateer—one that hardly covered the cost of hull and boilers of the beautiful craft. The Nixon boat came into the possession of the New York and New Jersey Sandy Hook Pilots' Association soon after the catastrophe to the New Jersey and was renamed Sandy Hook. Her appointments, as may be guessed by the former character of the newest acquisition of the pilots' association, were quite as luxurious as her consort, the New York, for it is conceded that the great risks and continued hardships that the Sandy Hook pilots face entitle them to every possible comfort during the hours that they can consider themselves at leisure. It is fitting that Lewis Nixon, who gave to his country some of the finest fighting ships and some of the finest merchant ships through his expertness as naval architect and naval constructor, should have built the staunch boat which is now doing its share towards maintaining the safety of the harbor for the peaceful shipping of the world, even though he did not, when he built the yacht Anstice, dream that his product would ultimately come into the very serious and vital service in which the Sandy Hook is engaged to-day.

There is a rattling good story told in connection with the building of the Anstice. Her keel was laid down in the Nixon shipyards for the purpose of supplying quick transfer in the most modern of refrigerating steamers for the big hauls of red snapper in the Gulf of Mexico. The Anstice was, in every way, a superior vessel in the matter of speed and staunchness and, it was believed, would be able to transfer the red snapper hauls from the sailing fishing schooners and bring them to American harbors without interference with the operations of the fishing fleet. Everything went well, in theory, until the Antsice appeared in the Gulf of Mexico. With signal flags flying in honor of her maiden voyage, the Nixon boat proudly approached the fishing fleet and came alongside the nearest fishing schooner, whose holds were full of freshly-caught red snapper. Upon the Anstice's captain telling the schooner's captain that he had come to take over the hold-full of fish so as to allow the schooner to continue her fishing operations without going to a harbor to discharge, the Anstice's skipper was told he might just as well go back to where he came from—or to a warmer zone if he preferred. "The crews of the fishing schooners," he was told, "have decided that they like to get ashore just as well as the crew of the Anstice and they propose to get ashore just as soon and as often as they get their holds filled with fish." So the theory of transferring fish from the fishing fleet to the shore in a refrigerating steamer did not work out in practice because of the eternal human desire for an occasional sight, at least, of home, sweet, home.

AUXILLIARY MOTOR PILOT BOAT TRENTON

Formerly the fishing schooner Kernwood. Purchased for pilot service in 1907

J. F. HOPKINS

President of the New Jersey Sandy Hook Pilots' Association

PULLING TOGETHER

By J. Culbert Palmer.

Counsel for both the New York and New Jersey Sandy Hook Pilots' Associations since organization in 1895.

MUCH of the romance and more of the picturesque associated with the pilot service disappeared upon its reorganization and the substitution of steam for sailing vessels. Dangers and hazards aplenty remain; intelligence, courage and resourcefulness are essential as of yore; but many unnecessary risks, much useless hardship and constant delay and trouble, vexatious and burdensome to commerce, have been eliminated. In 1895 combination and efficiency displaced competition and wasted energy. Prior to that time all the tight little schooners, of which there were thirty, were antagonists, and, as the pilot first speaking an incoming ship was entitled to the fees, rivalries among the various vessels were intense and the spirit of emulation as well as the desire for gain frequently took the pilot boats half way across the Atlantic in their eagerness to be the first to tender service. While the schooners were staunch and seaworthy vessels, manned by stalwart and experienced crews, the hazards and hardships of the business were great and were specially onerous to the pilots of advanced years and superior experience. Moreover, a great economic waste was involved in the method of carrying on the business then in vogue as the number of pilots and the cost of operating the competing vessels was out of all proportion to their total earnings. In addition, the inconvenience to the merchant marine was serious and entailed unnecessary expense upon the commerce of the port.

Improvements to the existing system had long been discussed by the body of the pilots, but, owing to the complex source of their authority, some being subject to the jurisdiction of New York and others to that of New Jersey, and because of the conflict of vested interests arising from the undivided and fractional ownership of the many vessels, and also because of the different points of view of older and younger pilots, the division of interests between pilots owning all or part of a boat and the so-called journeymen having no proprietory interests, the occasional feelings of embittered rivalry between the different boats' companies and the suspicion and ill-will at that time existing between the New Yorkers and the Jerseymen, dissensions had gradually developed that proved almost insuperable obstacles to any reorganization. At length a joint committee, representing pilots of both states, was appointed with instructions to form a working plan and, after much discussion and the reconciliation or compromising of many conflicting interests, the existing

system was finally adopted. The scheme involved the creation of two organizations, one composed entirely of New York and the other entirely of New Jersey pilots; a working agreement between such organizations; the purchase and retirement of the sailing vessels, and the construction and equipment of suitable steam vessels to take their place. A large amount of capital was essential to the success of the enterprise and this was furnished by the pilots themselves without recourse to outside interests. This radical change was brought about with very little alteration in the existing laws, either State or Federal, and without interference with the disciplinary control of the Pilot Commissioners of the two Commonwealths. So harmoniously and equitably were the conflicting interests adjusted and so efficiently has the business of the Associations been conducted that, for twenty-five years, there has been no disagreement between the organizations or their members which their governing committees have not been competent to adjust. Financial embarrassments have been avoided, discipline has been maintained, litigation has been eliminated, justice has prevailed, service has been vastly improved, and the successful operation of more than a quarter of a century has proved the firm foundation upon which the organization was erected. The welfare of the pilots themselves has been increased, their Commissioners have welcomed the Associations as aids, and all the maritime interests of the port are united in approval of the service, which is now generally recognized as the best and most efficient in the world. The beneficial results of compulsory pilotage, under government regulation, but allowing the free play of private initiative, operation and control, has been demonstrated and the entire absence of complaint or criticism from any source is the highest evidence of the superior character of the present pilot service.

The conditions arising from the war provided a severe test of the strength, solidarity and efficiency of the organization. The Federal Government took over its control and it became obligatory to conform to many necessary but embarrassing and confusing regulations. The expense of operation increased enormously with the general inflation of prices, while the earnings were still conditioned on the statutory fees. Much confidential and unrequited but patriotic work was done which can never be recognized formally and, through all, the machinery of the organization and the splendid spirit of its personnel remained unimpaired and the return from conditions of war to those of peace was accomplished without friction. However, the end is not yet. While much has been accomplished, much remains to be done. One or more additional steamers must be con-

structed when times become auspicious and various betterments and improvements must continually be provided in order that the service may retain in the future its present pre-eminence among the pilot organizations of the country.

THE NEW YORK IN A WINTER STORM

In all kinds of weather the pilot station boat cruises to and fro off Ambrose Light-ship, ever on the lookout for incoming ships. The crews of the pilot boats, from Captain down, are all apprentice pilots, although the boat is always in charge of a regularly licensed pilot. Would-be pilots are required to serve an apprenticeship of eight years

THE PILOTS' CLUB

SHORTLY after the free-for-all system of piloting, which made each individual pilot boat the headquarters of a small group of pilots who were partners in that particular boat, was changed and the pilots organized into an association under a pooling agreement, the 152 pilots—104 New Yorkers and 48 New Jersey men—in the service at the beginning of 1896, inaugurated the first Pilots' Club with an active membership of ninety-four. The Club had rooms on the fourth floor of 24 State Street. The first president was Eben Turnure and the vice-president was William V. Germond; the secretary Thomas Connors; the treasurer T. F. Murphy and the sergeant-at-arms Jacob M. Heath. The first trustees were John Hobbs, M. Sullivan, M. Carr, T. Lennan, James O'Sullivan, R. Bigley, G. Waldie and M. Lyons. A few years later the club moved to the building adjoining it to the south, 21 State Street, and more recently the entire pilot organization, Pilot Commissioners, New York Pilots Association, New Jersey Pilots Association, the combined New York and New Jersey Sandy Hook Pilots Association, the benefit association of the other organization and the Pilots Club moved to the commodious top floor of the Municipal Ferry Building, known as the Whitehall Terminal of the Staten Island ferries. In their new quarters the pilots have an unbroken view of the Upper Bay and the approaches to the North and East Rivers, a large and comfortable club room, billiard room, executive committee room and general assembly room. It is there that the historic library and collection of relics of the pilot service is kept and it is from this eyrie that the pilots set forth on their tours of duty, taking the ferry to St. George, there to board either the New York or the Sandy Hook for incoming duty, or going overland to the various piers to board ships outward-bound and which they are to see safely past the lightship at the harbor entrance, from which point they are brought home again, via the New York or the Sandy Hook, as the case may be, to the St. George landing after an absence from the city of anywhere from one to five days.

The present officers of the Pilots' Club are Joseph A. Murphy, president; Leo Oldmixon, vice-president; Edward Braun, Jr., secretary, and Henry W. Wood, treasurer. The club is entirely apart from the other organizations of the pilots and is purely a social affair. They maintain a lunch-room of their own in the club-rooms in the Municipal Ferry Building, on the same floor that houses the other departments and organizations of the pilots. A regular steward serves refreshments to the men who are waiting a call to a ship or who are waiting for their turn to board the steam pilot boat and take up station duty at the lightship.

Among the books in the club's library are some real old-timers in the list of magazines and contemporaneous journals, from which much of the romantic as well as the commercial history of the Port of New York may be secured. The older pilots love to settle down in a corner of the club room and spend hours in reading about the days that were, that bring memories back of events in which many of them figured prominently. Paintings and old prints adorn the walls, these pictures showing various old ships and old pilot boats and, in a number of instances—as will be seen by glancing at certain of the illustrations in this volume—depicting the painter's conception of the valorous deeds that were done at sea in the pilot service.

PILOT CLIMBING ABOARD THE SANDY HOOK AFTER BEING TAKEN OFF AN OUT-GOING VESSEL

COMMISSION CONTROL

AS has been said before in this history, the New Jersey Pilot Commissioners were the result of an act passed by the New Jersey Legislature April 17, 1846, and the New York Pilot Commissioners came into being through an act of the New York Legislature passed seven years later. In both instances the Pilot Commissioners form a supervising body over the New York and New Jersey pilots, regulating the licensing of pilots, the work of the pilot boats and the fees for pilotage.

Both the New York and New Jersey Pilot Associations work in harmony with these commissioners. The New Jersey commissioners, of whom there are six, are appointed by the Governor, each for a term of three years. The New York commissioners, of whom there are five, are appointed in a different manner, although their powers and authority are on a par with those of New Jersey. Their terms are for two years each and three are appointed by the Chamber of Commerce of the City of New York and the other two by the Board of Marine Insurance Underwriters. The commissioners of both states are men of the highest standing in their respective communities, who have the welfare of the Port of New York, both from the New York and the New Jersey standpoint, thoroughly at heart.

The present New York commissioners are Marcus H. Tracy, president; Arthur M. Smith and Joseph Morrell, appointed by the Chamber of Commerce, and George L. Norton and Melville M. Crockett, appointed by the Board of Underwriters. The present New Jersey commissioners are Benjamin Van Note, president; William Cox, Alfred Devlin, Thomas Goldingay, S. D. Haley and John Predmore.

The New York and New Jersey pilots each have their own organization, with their own officers. The New Jersey organization has for its President, J. F. Hopkins; Secretary, W. S. Devereux. The New York organization has Frank P. Van Pelt as President and H. Arnold as Secretary. These four men, together with New Jersey pilots, G. Oldmixon and J. E. McCarthy, and New York pilots, R. J. Waugh and A. Anderson, form an Executive Committee of eight representing both the New York and the New Jersey pilot associations, with Captain Van Pelt as the chairman at present of this Executive Committee.

Much comment has been raised at times over the question of compulsory pilotage and the question has had opposition brought to bear against it in an effort to make pilotage a matter of choice with sea captains. To the uninitiated it would seem, perhaps, that the master of a vessel capable of running his ship across the Atlantic Ocean between New York and a European port, for instance,

would not need the assistance of a harbor pilot to bring his ship safely past Sandy Hook and into the Narrows. Many a navigator gets his license "for the Atlantic and all Atlantic ports" and would —again to the uninitiated—seem to be covered for the Port of New York as well as for deep water out in the Atlantic.

Conditions in a harbor continually change, however, and a month's, even a three weeks' absence, makes a great difference in the channels at various times. That is one reason for there being a compulsory pilotage system but still another and a vastly more important one is that, should there be no compulsory pilotage there would be no inducement for pilots to spend their days off Sandy Hook if their services should be taken in the case of storms, or other emergency, when the need of an expert harbor pilot becomes a necessity to the navigator of a vessel, just as a consultation with another expert physician becomes necessary to the attending physician in a grave emergency.

Coastwise shipping is not subject to compulsory pilotage, for trans-ocean shipping in the harbor of New York is heavy enough to provide sufficient revenue for the upkeep of an efficient pilotage force in the biggest American port. In some Southern ports there is compulsory pilotage for all shipping, coastwise and other shipping, for the reason that, unless all shipping were included, there would not be enough compulsory pilots to provide the funds necessary to keep the pilots on the job for every emergency. A port without compulsory pilotage would be subject to the whim of the navigator of the ship who might be incapable of bringing his ship safely through the harbor channels yet might believe that he was capable, thereby causing accident and interruption to navigation through his stubborn refusal to take on a pilot absolutely familiar with every danger point in the harbor. It need only be said that any New York or Sandy Hook pilot could bring a ship through Sandy Hook and the Narrows into the Port of New York even though every buoy and danger mark were removed from its anchorage, something that no other navigator could do, no matter how expert in handling his vessel on long voyages.

It was Michael Murphy, Sandy Hook pilot, who was sent to England to bring back the then seventh wonder of the world, the famous Great Eastern—not to pilot her across the ocean but to study the greatest ship of her day during the transatlantic voyage and be prepared to guide her safely past Sandy Hook and through the Narrows upon her arrival here on her maiden trip from England.

It was an American Admiral who praised, without stint, the admirable handling of the great convoys of troop and merchant

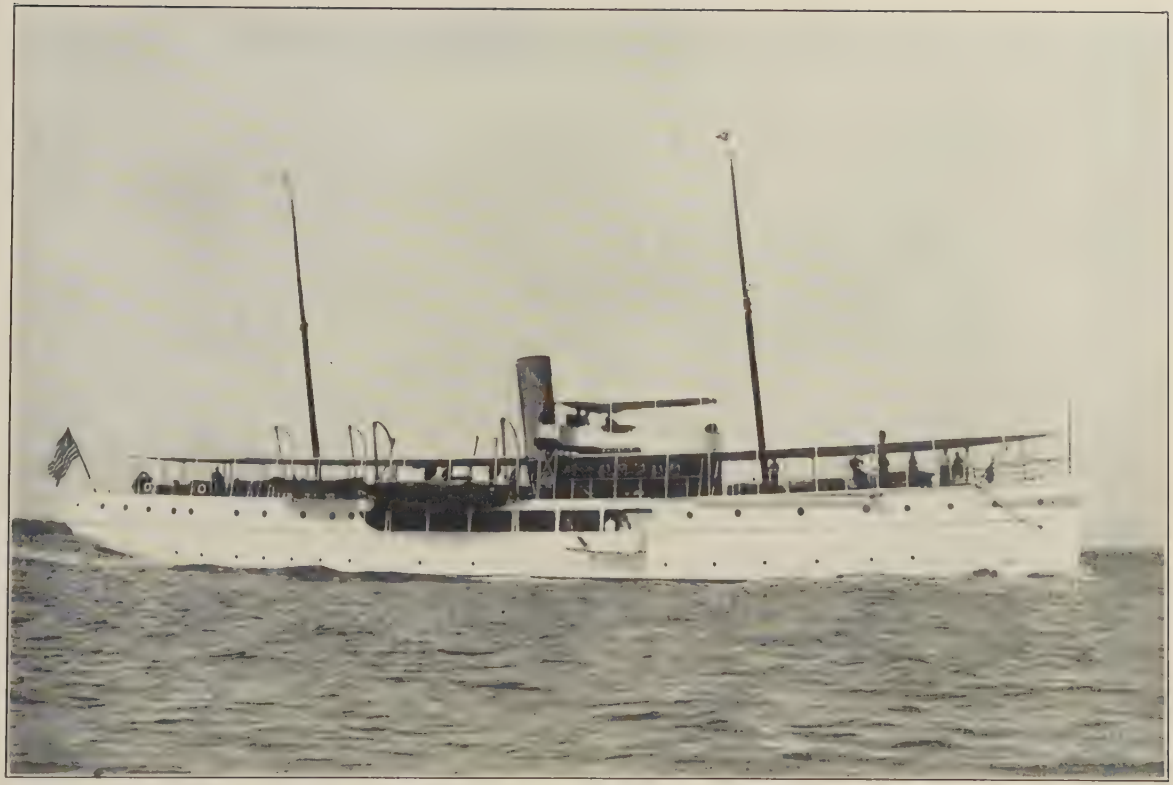
ships—but especially the ships on which our boys went overseas to help put a quietus on the World War—by the Sandy Hook pilots. It was during this war-time activity that the Sandy Hook pilots, in a period of nineteen months, handled 22,000 vessels without a single accident or an error of judgment and during one single Sunday, in three and one-half hours, sixty-nine ships were safely handled by the pilots without anything happening to mar their safe transit through the unmarked channels of the Port of New York.

Before the World War the movement of shipping in New York harbor was largely foreign, American ships being, for the most part, restricted to coastwise vessels. During the World War the work of piloting ships, while reduced from a merchant marine standpoint because of the tremendous losses in ships on the high seas and abroad through the acts of the enemy, was vastly increased by the great numbers of transports that were continually being sent overseas to accommodate the legions of American fighters bound for France. When the war ended the amount of shipping of all kinds, including the returning transports at the beginning of the homeward movement of troops, taxed the efforts of the Sandy Hook men to the utmost and since then the merchant marine fleets, now augmented by the thousands upon thousands of tons of American merchant shipping from every section of the universe, has kept the pilots busy as they seldom were before in the history of their profession.

Had there been no compulsory pilotage in New York harbor there could not possibly have been the same absence of disaster in the port during the past two decades that has marked local navigation in that time. It is much more true to-day than it ever was before and those who know the difficulties of navigation and who do not look at the question without having weighed the facts are agreed that Congress did a wise thing when, under the guiding hand of the late Amos J. Cummings, it refused to pass an act repealing the present compulsory pilotage laws.

There is a good story told of a British tank steamer that was ready to leave Baltimore one dark and dirty night when the harbor pilot refused to take her out before daylight, considering it a needless risk. The tramp steamer's captain refused to lose some ten hours and so started out without a pilot. The steamer got out and across the Atlantic without mishap and the Baltimore pilot was suspended because of his refusal to take the ship out of the harbor. But after her cargo had been discharged in London and part of a new cargo taken on board—enough to stiffen her—the tramp steamer's engineer proceeded to pump out her ballast tanks

to see that they were perfectly dry. He pumped and pumped and kept it up for three hours, after which he found the tanks to be still full. He continued to pump all day and all night and still the tanks remained full, notwithstanding the continual flow of water through the pumps. Then the steamer was put in dry dock to solve the mystery and the discovery was made that she had several holes in her bottom *and had simply been floating on her tank tops.* The captain of the tramp then had a faint recollection that his ship had "scratched gravel" in Hampton Roads on the night that he essayed to take her out without the aid of an experienced harbor pilot, but he had said nothing of it in his log. The underwriters allowed that, instead of gravel, he must have run his ship over about three acres of rock, missing disaster by probably the fraction of an inch and that it was mere dumb luck that the tank tops held out through the transatlantic passage. It is not recorded whether the luckless Baltimore pilot was finally exonerated from blame for his refusal to take the steamer out under the circumstances.



STEAM YACHT PRIVATEER

Sold to the Sandy Hook pilots by Mr. R. A. C. Smith to replace the ill-fated New Jersey, run down and lost off the Ambrose Lightship by the fruiter Manchioneal, July 10, 1914. She was refitted and named the Sandy Hook. Mr. Smith would accept only a nominal sum in payment for the beautiful vessel—hardly the cost of hull and boilers

PILOTS, BOATS, HARBORS AND HIGH LIGHTS

By R. A. C. Smith

PILOTS, pilot boats and the Port of New York have been interesting facets on the general facade in my life and as long as I am conscious and able to get around I shall be interested in not only the Port of New York, but one of the very vital parts of it which exists in pilots as an institution and as men.

My parents had sent me to school in London, England, where I was supposed to learn all the things one could know about accounting and the business of over-seas development. The price of entertainment in London in those days was not excessively high but whatever the elevation it was beyond my particular purse and I had to provide my own entertainment. The fates led me to the acquaintance of an artist and a studio where panoramas were painted. The artist needing a boy about my size allowed me to come around after school hours and boil the glue, mix the color, wash the brushes and turn the roll on which the panorama was being rolled up after a section of it had been painted. And the picture! Nothing will ever eradicate from my memory that picture. It was considered by the artist his masterpiece. He had named it "The El Dorado." It was the story of a family of the Old World leaving for America. The part of it that lives most vividly in my memory was the steamer on which the family had successfully crossed the Atlantic at the point when it was being hailed by a pilot boat. Then the Lower Bay, and as a grand finale "Castle Garden" shown first by night and then by day, and the transfer of the fortune seekers from the steamer to "Castle Garden" and from there out to the conveyances that were to take them to transportation for the West and South. The final picture showed them in the new country prosperous, happy and all that sort of thing, but the picture of the pilot boat and "Castle Garden" were the particularly impressive things to me. By the time the artist had reached "Castle Garden" in the creation of the picture, I had become so enthusiastic over the developing masterpiece and had boiled the glue so well and kept the brushes so clean that he allowed me "to get into the picture" so to speak. In making the night effect around "Castle Garden" it was necessary to have sparkles on the waves in the water, made by moonlight reflection in nature and in the panorama made by lights behind slits in the canvas. I was the author of the slits. With a sharp knife I was allowed to cut out the spaces in the high lights in the waves of the water by which the effect was to be produced. I am not sure whether the impression of this picture was the inspiration, but I am sure it made my determination to go to New York.

When I came to New York I came on the last of the side-wheel steamers from Havana and it was called the "Morro Castle," then owned by the Atlantic Mail Steamship Company, which was then passing out as a power in coast trade service.

For a long time before we reached the water adjacent to New York I spent all my time at the forward rail looking for the pilot boat with the memory of my days on the paint bridge and the picture in the artist's studio where the panorama had been painted. After a while it seemed to me as though the pilot boat had missed us or that we had missed New York and we were going to sail on forever, but one pleasant morning there came rapidly up out of the horizon on a snappy north-east blow pilot boat No. 7. From the time that No. 7 came alongside until the pilot was aboard no action escaped my interested scrutiny. When the pilot came aboard I made it my business to become acquainted with him and we were friends for many years. It was a good augury, because I have been friends for many years with a great many pilots and in the days when my business took me to Cuba on frequent trips, I saw more and more of what an important part the pilot plays in the life of those that go to sea.

Those were the days when pools were made as to whether the number of the pilot boat that reached us first would be odd or even, and I have seen some considerable sums change hands.

It is perhaps not too much to state that when Mayor Gaynor appointed me to the Dock Department as Commissioner, I could not refrain from smiling at the curious things that fate does to us and of the peculiar coincidences that affect our lives and over which we seemingly do not have the slightest thing to say. The first day I went to the Dock Department on Pier A I looked out over the water across to the Aquarium, which still has all of the architectural appearance it had when it was known as "Castle Garden," and let the pressing business of the moment wait for just a few minutes while I ruminated on what seemed a specially curious sequence of periods having to do with the Port of New York and pilots from the day when I put the high lights on the water of the Harbor on the panorama canvas to the then present time when as Dock Commissioner I was to put 50 or 60 million dollars worth of structures around the Harbor to bring it up to some of the efficiency required.

CAPE REGATTA, MAY, 1873

Won by pilot boat Thomas S. Negus, No. 1

REMINISCENCE AND COMMENT

By Thomas E. Rush

IT SEEMS fortuitous that my participation in the activities of the recent great war should have been in the office of the Surveyor of Customs of the Port of New York, a branch of the Treasury Department of our government, where I served from September, 1914, to May, 1921; and while my incumbency of that office afforded me numerous opportunities for observing the interesting and dramatic features of the war from a side line, it also gave me the inspiration to write *The Port of New York*, a book quoted today in our High Schools and Colleges, and recognized, also, as an authority on the Port by the leading civic organizations of this city.

My parents were both born in the City of Galway, on Galway Bay, described as one of the most attractive harbors on the west coast of Ireland, and known to all lovers of Celtic literature as the "Land of the Fairies," and so it isn't surprising that in this beautiful section we find the Celtic literateurs, Lady Gregory, Edward Synge and George Moore, seeking inspiration for their work, with James Stephens of *The Crock of Gold* fame a short distance further down the coast. Some years ago I made a visit to the "Deserted City of West Ireland," and had an opportunity of exploring "The Aran Isles" through the courtesy of the editor of the *Galway Times*, whose brother, Mr. William Garrow Fisher, was for many years a reporter on the New York *World*.

My own lines haven fallen in pleasant places. The divinity that presides over the Port of New York arranged my entree into this world in an old-fashioned house about two blocks from what was then known as Catherine Ferry, located on the East River, a short distance from Fulton Street. So that my acquaintance with New York harbor began at a very early age. I remember as a very young child going down to the old Market Street dock to watch the settlement of quarrels by the manly art of self-defense; and only a block further away, where the floating church was located at the foot of Pike Street, did I first learn to swim, a lesson I shall never forget, because I fell overboard, "clothes and all," and had to sink or swim. Later on I had sufficient self-reliance with the other boys in the neighborhood to swim across to the opposite shore, and during the days of a subsequent particularly severe winter I enjoyed a walk across the East River on the ice to the Brooklyn side.

When the first bridge was in the course of construction, then known as the East River Bridge, another youngster, Billy Blackford, son of an old-time stevedore, and I got within the gates on the Park Row side and escaping the detection of the watchman charged with the responsibility of keeping out intruders, we walked

across the open ties on the bridge work to the Brooklyn side. A single mis-step would have precipitated either of us to the river below. We were promptly ordered out of the Brooklyn side of the bridge and came home, across Catherine Ferry, with a vivid recollection of the great adventure through which we had passed; an adventure which lost none of its glory by the telling, in fact the vanity of description resulted in the finest spanking my father ever gave me. I recall the night of the official opening of the same bridge, the fireworks, the music, tooting of the whistles, etc., as I sat straddling the bowsprit of a California trader at the foot of Dover Street.

In those days our vacations were invariably on the Roosevelt Street ferry to Hunter's Point or in the Battery Park. Our family outing on Sunday afternoon was along South Street from Catherine Ferry to the Battery and it was a great joy to hear my father tell us his experiences with the various shipping lines and vessels in the harbor.

Before I was ten years of age I was taught how to box the compass, the names of the different sails and other parts of the various vessels, the difference between the brig and the brigentine, the bark and the barkentine, the ship and the schooner. I have frequently gone with my father at midnight or later, when he would receive from the Maritime Exchange a telegram that a particular vessel had passed Sandy Hook and was on her way to Quarantine, in an open Whitehall boat from Quigley's Basin, alongside of the present Barge Office; seated in the stern, while he rowed over eleven miles down the bay to meet the incoming vessel, an event which happened more frequently in the winter than in the summer, and on those occasions it was not at all a difficult matter for me to climb up the side of the vessel or along the rope ladder which led to the deck. Some of the sailing vessels of that period with which I was quite familiar as a boy were the ships, The City of Philadelphia, The Granite State, The Golden State, the bark Benefactor, the barkentine Carrie L. Tyler, and the brig L. W. and P. Armstrong. The Golden State and the Benefactor belong to the old firm of A. A. Low & Company, of which former Mayor Seth Low's father was the leading member. These ships carried cans of oil to Java, China, and Japan, and in return brought tea, spices and other commodities for the American market. I have seen many interesting things on those vessels. Occasionally my father would bring home a parrot or cockatoo or parakeet or Java sparrows, and frequently a monkey. The front room on the parlor floor of our house was used by him as an office; in this room was an old-fashioned marble mantel, and around one of the mantel columns the monkey was tied, making it quite safe

for us to tease the monkey, but one day the constant tugging of the animal brought down the marble column, smashing one of my toes. My mother had a pronounced aversion to the species and saw to it after a short time that the monkey was given away. On one occasion my father brought home a monkey from the bark Liberia, trading from the West Coast of Africa to New York, a very queer, light-colored animal, which gave his face an uncanny appearance. This monkey was tied to the fence in the yard erected around a stone areaway leading into our kitchen. One day, Mary Martin, our good old Irish cook, gave the monkey some whiskey, as a result of which he became intoxicated; he couldn't stand on his feet although he made determined efforts to do so, and apparently was enjoying a glorious time; but in the cold gray dawn of the morning after, the monkey hammered his head against the post and seemed to be in great agony. For the next few weeks that he was with us Mary could not get within twenty feet of that monkey; when he saw her he made desperate efforts to break his leash and punish her for the pain and trouble she caused to him.

Not the least interesting of my reminiscences of those days was the arrival of a ship sailing up the harbor to the pier, the sailors singing the old-time chanties while they held the ropes or revolved the capstain. I remember one night standing at the end of the pier fascinated by the great black hull and the immense white sails slowly rising into the starlit night, and out of the silence came the melodies of the old chanties. Some of the lines of these ocean folksongs are quoted today in the book called "The Harbor," by Ernest Poole:

"As I went a-walking down Paradise Street,
A pretty young maiden I chanced for to meet."

A heave on the ropes and a deafening roar,

"Blow the man down, bullies,
Blow him right down,
Hey, hey, blow the man down."

Until the day he passed away my father never failed to indulge his fancy about the Port, deploring the coming of the steam vessel to take the place of the sailing ships, the romance of his younger days.

But all of this aside from the question as to what the Sandy Hook Pilots' Association of the Port of New York meant to the general public. Everybody in those days, at least everybody connected with shipping or along the river front, knew that the pilot boat put out to sea and somewhere beyond the Prohibition limit of today boarded the incoming vessels and guided them safely through the Channels into the port, occasionally staying aboard the ship

until it reached its berth. The pilots, of course, all lived near the water-front, either in lower New York or in Brooklyn or on the Jersey side.

The life of the pilot of today isn't as romantic as it was centuries ago when shipping first began as a necessity for the development of commerce in the Eastern section of the Mediterranean Sea. The earliest vessel I heard about in my school days, the bark Argonaut, sailed through the little harbors in and about the ancient Grecian Archipelago; the pilots on that trip were distracted by the flirtatious mermaids, particularly between the rocky shores of Scylla and Carybdis. Orpheus, the mythological god of song and the lyre, was not only captain of the vessel, but also a good judge of human nature. He realized the danger on the part of the pilots on a voyage through these perilous waters unless they were attentive to the job for which they were employed. He knew, too, that the pilots had a passion for music; so he promptly took his stand in the bow of the vessel and played beautiful melodies on his golden harp, so entrancing that they drew the pilots away from the sirens of the deep.

This story long antedated the Christian era, and yet today, as at that time, the pilot is recognized as an advance agent for the promotion of the progress of the world, to point out the right course to the captains of industry, guiding them over the dangerous reefs and shoals, that man may not only be clothed and fed but also unhindered in the pursuit of happiness. There is a quotation from the Old Testament, Psalm CVII 23, "They that go down in ships, that do business in great waters, these see the works of the Lord and His wonders in the deep." This inscription over the entrance to the Mersey Docks in Liverpool greets every sailor and visitor from across the seas and suggests the mystic connection between a life of adventure on the ocean blue and unknown greatness of the world beyond. This message from the ancient prophets has been a significant incentive for men to choose such a hazardous vocation as the pilot's and in a practicable but inconspicuous manner to help in the task of colonizing the unknown parts of the world by guiding ships of all kinds through perilous places, transporting men, into the ports and havens of all points of the compass, in order that countries might prosper, that commerce might be developed and nations established and progressed. In our population of six million people on the New York side of the Port of New York, many speaking strange tongues from every section of the globe, scarcely any attention is given to the silent guide whose intimate knowledge of the reefs and shoals within and outside of the harbor helps him

to safely lead the great ocean liners to their berths of safety within our harbor.

The evolution of our port has been one of the extraordinary events of the age. An idea of the extent to which the shore front, almost eight hundred miles, is utilized in trade alone is disclosed by the fact that over two hundred ocean steamship companies and agencies operate to foreign ports from New York; thirty-four steamship lines operate to the West Indies and Central America, forty-seven lines to South America, ninety-seven lines to Northern and Western Europe, sixty-eight to Mediterranean seaports, eight to the East and West Coasts and eleven to the South Coast of Africa, twenty-nine lines to the Asiatic, Australian and New Zealand ports; something like sixty regular lines are operated in coastwise and river trade, six coastwise lines to South Atlantic and Gulf ports, fourteen to New England ports, two barge lines carrying freight to Philadelphia and Baltimore, and eight boat lines to points up the Hudson River; besides which there are two canal lines operated via the New York State Barge Canal to Buffalo and the lake ports. London has less than two hundred miles of similar water-front and Liverpool, Hamburg, Antwerp and Rotterdam have considerably less. At Ambrose Channel, which is as familiar to the Sandy Hook pilot as Broadway is to the average theatrical manager, the United States Government has spent over half a million dollars for new light-houses, buoys and range lanterns, illuminating the entire length of the Channel with white lights on buoys on one side and an equal number of red lights on the other. Nearly fifty per cent of the exports and nearly sixty per cent. of the imports of the United States are handled in and through the Port of New York, and on the New York side there are approximately six hundred and ninety-five piers, of which the United States Government owns twenty, New York State owns nine, private interests own four hundred and ten, and New York City owns the balance.

And yet, in spite of this enormous development, the Port of New York, the great waterway of this country could not be the immense financial and industrial success that it is without the Sandy Hook pilot whose clear eye and steady hand locates the points of danger which must be carefully avoided by all vessels coming into our harbor.

THE STORY OF THE PILOT AND THE BOY

By Palmer Campbell

THE writer has always been intensely interested in those who "go down to the sea in ships"; and so his first recollection of the man who pilots the ships up from the seas was a distinct thrill and a lasting memory.

It was in November, 1869, that as a boy of 12 years he voyaged from Liverpool on the old S. S. "Calabria" of the Cunard Line. At that time the New York and New Jersey Pilots were in intense rivalry for business, and their boats went far out, even to points off the Grand Banks, to secure customers.

The early morning of a smooth misty day revealed two pilot boats racing under all canvass to be first to reach the steamer.

Just which pilot won is not remembered, but the one that did will never be forgotten by the boy who watched the race and saw the victor win.

It was a couple of days' run, in those good old days, before the pilot's duties and responsibilities commenced, so he had lots of time to hang around and swap yarns with the passengers, telling them the last he knew of happenings in the new world—some of which, because he had himself been away a long time, was stale news to the better posted passengers.

One afternoon the writer sat on the deck amidst a group who were talking to the pilot, asking him questions about the country they were going to. It may have been that because the small lad showed an intense interest, the pilot caught the telepathy of his thought; anyhow he turned to the boy and said, "Well, kid, where are you going to?" The surprised lad stammered, "I'm going to Hoboken, sir."

The writer remembers the utter confusion with which he was covered by reason of the effect of this reply.

Every one burst into laughter, and the pilot said, "Well, son, you are going to the land of 'Beer and Pretzels.'"

The pilot no doubt, in the course of nature, has taken his last trip over the bar. The boy stuck to the land of "Beer and Pretzels," and in the course of events became active in making it a most important part of the greatest port in the world and, through the experience thus gained, he has realized that the man who safely pilots the navigation in and out of the port is after all a most valuable and important influence in its development.

THE WORLD'S GREATEST PORT

THERE can be no question but that New York is the greatest port in all the world. From the viewpoint of natural harbor facilities, New York offers advantages that few other harbors of the world have to offer. Even before the extensive dredging at the harbor entrance and of the channels was accomplished, New York presented a natural haven for shipping and facilities for the greatest inflow of world commerce equalled nowhere else on earth. There are other world harbors where whole fleets could find safe refuge but no other harbors where this particular feature forms but one of a dozen features that combine to make New York harbor the most important of all.

From the standpoint of commercial movement the Port of New York has also maintained a pre-eminence among the great seaports of the world. If America's own merchant fleet did not always contribute largely to the importance of the Port of New York, the merchant fleets of all the other maritime countries of the world did contribute towards making New York an all-important seaport. Since the growth of the Republic the Port of New York has grown apace until, to-day, it stands without a peer among the great seaports of the habitable globe.

Many are the things that have contributed to make New York a great port and many are the men who have aided in the building up of the port's importance. First, naturally, come the shipping interests without whom no port could become great; but, second come the far-sighted business men who saw New York's possibilities and who made the Port of New York so attractive to shippers that New York drew the bulk of the trade and traffic coming to the Atlantic coast of the United States and gradually grew in commercial importance until the name of the city, as a commercial center, became a by-word throughout the world.

Even in the earliest days of the Colonies, New York pressed forward in shipping importance of her harbor. It was a prominent British shipmaster who said that the Colonists had done more, between 1630 and 1640, to develop sea shipping than all the rest of the world had done in the previous two hundred years. It was during the latter year that New York had grown to such proportions, commercially, that she had absorbed most of New England's fur trade, putting New England to the necessity of devoting its time and attention to fishing instead of trying to wrest pre-eminence from New York as a commercial center and sea-port. Twenty years later a Captain Cromwell took other means of bringing the port of New York to the attention of the world although, possibly, not in a way that would bring him much commendation in these honest,

modern times. This skipper maintained a fleet of sailing ships so fast that no pirate (there were plenty of them in those early days) or revenue cutter could overtake them and Skipper Cromwell automatically exempted himself, therefore, from paying any port dues, taxes and the like although he operated his ships out of the Port of New York to the West Indies and, overseas, as far as Madagascar. His shipmasters traded cargoes at sea at their pleasure with other shipmasters or, under a mutual display of cannon and cutlasses, with pirates. They would also, occasionally, capture pirates and their pirate craft—presumably when the pirates refused an equitable barter—and return to some lonely point on Long Island, or the Highlands and land their honest—and dishonest—cargoes, duty-free. The Colony shipmaster—which soon began to mean the New York shipmaster—soon got the name of being the most intrepid skipper of the sea and a more dreaded factor in the life of the pirate than any government revenue or naval officer.

In these days of prohibition in the United States and the fantastic fortunes said to have been made by those engaged in bootlegging, it is interesting to record the 17th century voyage of a Captain Mulcoy, in the American brig Nassau, out of New York for Madagascar. Captain Mulcoy bought rum in New York at forty-five cents a gallon and sold it on the island off the African east coast at $15 per gallon. It is not related how many gallons the New York skipper took on board when he sailed out of Sandy Hook, but the profit per gallon on his cargo was, to say the least, illuminating.

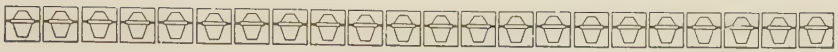
From New York went the first ship to go from the United States to China. She was the Empress of China, a fast clipper—tea clippers they came to be called—commanded by Captain John Green, with her destination as Canton. It is said that the Empress of China cleared a profit of $50,000 on the voyage to Canton and back and it was not long before a fleet of "tea clippers" was in operation in the New York and Canton trade. In those days and up to the early part of the nineteenth century, these clipper ships made mighty fortunes for their owners and added greatly to the world-renown of New York as a commercial port. Among the celebrated voyages recorded as having begun in New York are those of the clipper ship Columbia, late in eighteenth century, under the command of Captain John Kendrick, and the sloop Washington, Captain William Gray. The two sailing ships set a course for the north-west corner of the United States, via Cape Horn. Captain Gray was the first American shipmaster to sail around the world in a vessel flying the American flag. From the north Pacific Coast Captain Gray returned to New York via Japan, China, Singapore

and the Cape of Good Hope, having thus encircled the waters of the globe. Captain Kendrick remained in the North Pacific and went on a voyage of discovering, locating and naming the Straits of Juan de Fuca and the Columbia River. After dickering with the Indians along the Columbia River, purchasing land and building forts he opened trade between the Columbia River and Canton and made a fortune in gold and the fur trade. Incidentally, this New York captain mapped out the present boundary between the United States and Western Canada.

Following the War of 1812 shipping routes were opened between New York and the Columbia River, via Cape Horn, the ships out of New York went around the Horn to China or the north Pacific Coast of the United States almost every day in the year.

Today every European country with a sea outlet has its own merchant fleet represented in the Port of New York. In the old days it was not unusual for European services to have their inception in New York and so came about the establishment of the famous Black Ball fleet of fast packets and the opening of the New York-Liverpool service by them under the direction of Isaac Wright and his associates. These swift sailers were not what would, today, be termed leviathans. They were of but 400 tons burden but they were palatial ships of their time and they made speed under their tremendous—and picturesque—spread of sail. This was in 1816 and the Black Ball fleet, together with the then existing "tea clipper" fleet, formed the nucleus of a large American merchant marine. The names of the Black Ball ships were household words in those days, just as the name of the Aquitania, of the Leviathan, the Olympic and others of their kind are to-day. The clipper fleet included the James Monroe, Canada, Britannia, Harvest Queen, Daniel Webster, Montazuma, Yorkshire, Great Western and the Columbus.

When, along about 1823, there appeared to be a great need for a regular service between New York and Havre, it was a group of New York shipping men—not a group of Parisian financiers—who started the movement for a service to France and brought it into being. Out of courtesy to the French the majority of the ships placed in the New York-Havre packet service were given French names, such as the Henri IV, Louise Philippe, Silvia de Grase, etc. There were also the Mad Helen, Don Quixote, Queen Mab, Duchesse d'Orleans, Baltimore, Erie, Utica, William Tell, Oneida, France, Mercury, Galia and Poughkeepsie. It was a very considerable fleet and greatly enlarged the fame of the Port of New York, the hailing port of all these vessels.



The two decades immediately preceding the Civil War were prolific in the output of important services having their inspiration and inauguration in the Port of New York which, at that time, had secured a firm hold in international estimation as the most important sea-port of the world. Some of the most famous of latter-day clipper ships went out of New York to all parts of the world and some of the fastest voyages were recorded, all starting from the anchorages in the Narrows. So it was that the clipper Flying Cloud made the voyage from New York to San Francisco, via Cape Horn, in eighty-nine days and it was the Flying Cloud's great record that caused the building of her sister ship, the Great Republic.

Decadence of the American merchant marine came hand in hand with the war between the North and the South. The vast fleets of American ships, mostly of the clipper and packet type, gradually disappeared from the harbor of New York. It is interesting, indeed, to turn to that veteran pioneer shipping journal, the *Maritime Register* and note in its files of the early sixties the number of sailing ships—American sailing ships—reported as being in the harbor of New York as against the number of foreign vessels listed. Slowly but altogether too surely the number of these staunch American ships decreased until the American merchant marine became a mere skeleton of its former glory. Except, possibly, sentimentally, it made little difference to the Port of New York, for the Yankee ships gave way to foreign ships and New York harbor remained as crowded as ever with shipping from all over the world. Until the world war, the same *Maritime Register*, in its capacity as the unerring, inexorable weekly barometer of the world's shipping, continued to show foreign supremacy in the number of ships, not only in service on all the seas but in the matter of the New York anchorages. During and since the war New York harbor has come into its own again and American ships again took the lead in numbers seeking its shelter and advantages.

No world sea-port was called upon to harbor so great a number of ships of all nations as was New York during the world war. Thanks to men of vision who saw the wonderful future opportunities for the Port of New York, vast improvements in harbor and pier facilities were undertaken. R. A. C. Smith, as Dock Commissioner, did much as a latter-day patron of the port and his enthusiasm for everything that would increase the importance of New York harbor was unbounded. Murray Hulbert, his successor, saw the importance of providing deepened channels and wider fairways for New York even before he became Dock Commissioner and worked hard for harbor improvements for this port in his capacity as Rep-

resentative in Congress. Men not in public life but equally alive to the port's future did their full share by building up the warehouse facilities, the terminal railroad facilities, harbor transfer facilities and freight handling facilities ashore. So the Port of New York was built up to its modern, up-to-the-hour standard by public-spirited men of many varied business activities, running the gamut from shipping, marine insurance, warehousing, railroading, harbor transportation, freight handling, brokerage, quick ship-repairing, trucking and ship chandlery to the more remotely connected industries.

There are no finer wharfing facilities in any port of the world today than in New York Harbor. We have yet to reach the state of perfection where trains with merchandise may roll right up to the outgoing freight steamers or where empty trains may roll right up to outgoing vessels on the piers but even in that direction the Port of New York has made a very good start. Vessels of any draught may safely come to an anchorage in the calm waters of the upper or lower bay, however, and there are few piers along the broad Hudson where deep-draught deep-sea craft cannot find immediate berthing facilities at either high or low tide.

On any bright morning—for New York's shipping seems to come out of every nook and corner of the harbor like bees swarming from the hive, coaxed out by a brilliant morning sun—one could take a photograph from the Battery, with Staten Island as the distant background, and have a picture that would be practically legal proof that half a hundred craft were doing their maritime best to run into, sideswipe or back up against one another. On such a morning one may see ocean steamships, with perhaps an Olympic, a Mauretania or Rotterdam in the general scheme, sailing vessels, coal barges, steam lighters and queer little local lighters depending upon one awkward and disreputable sail for motive power, puffing and wheezing little tugboats, coastwise steamers and veranda-decked Sound steamers and excursion craft, little yawls with noisy "kickers," mud scows at the ends of huge tow lines and the inevitable rowboats of the junk dealers, all happily pursuing their independent courses amidst a perfect din of shrieking whistles from the smaller steam and motor vessels and the low, sonorous blasts from the deep-throated whistles of the craft of more imposing tonnage.

The war changed much in New York Harbor, as it changed much in other parts of the world—not forgetting Potsdam and Vienna. So it is that the famous old "tea wharves" and the Far East stores are now not so distinctly segregated as they were before the days of 1914. Over in South Brooklyn, for instance, there used to be an unmistakable smell of spices, teas and things Oriental, with a visible

mixture of turbanned Lascars and Javanese, where the docks of the freight lines running ships to and from the Far East. Army bases, born of war's necessities, have supplanted some of these interesting places along the New York water-front, although a return to normal conditions is doing away with the last vestiges of militarism and navalism, in and about the harbor of America's greatest city. Still, distinct sections for distinct foreign products are no longer the rule and the Lascar crew now walks ashore from under the shadow of the Woolworth Building, at a Hudson River pier, quite as often as from a pier in the old Red Hook flats section.

Although at this very instant rejoicing in the return to normalcy and the gradual disappearance of army bases in the Port of New York, a sketch of the port's history would hardly be complete without calling attention to the wonderful engineering feat accomplished when some brilliant mind in the Army Engineer's Office thought out a scheme to enlarge famous Governor's Island. The work was begun several years before the world war began and New Yorkers generally opined that it was a needless expenditure of government (and the tax-payers') funds and of no use except to provide the garrison's officers and their families more promenade room and better tennis court facilities. It is not on record who first suggested the extensive job that finally converted Governor's Island into a body of land, surrounded entirely by water, of a size sufficient to provide space for a respectable small city; but it is a matter of record that, since the memorable day in April, 1916, when the United States decided that we would enter the world war, the government was able to expedite effective shipments overseas directly from its New York military reservation and to train thousands of men there, a feat that would have been entirely out of question before Governor's Island was made more than twice as large by the mere reclamation of a shallow-water portion of the upper bay. The man who first suggested the improvement built better than he knew —unless he had inside information at least five years in advance of any other American as to Germany's plans for August, 1914. Thirty-five large, fire-proof warehouses, each with a standard gauge railroad track, on either side, on which freight cars are brought and loaded directly at the doors of the warehouses, today form an eloquent tribute to the fortunate idea that the originator of the Governor's Island improvement developed and carried to a successful finish. Airplanes, now so common that the average New Yorker hardly lifts his eyes from his morning or afternoon newspaper to glance at them in the skies, rise up from one of the most complete aviation fields in the country—in the heart of the Governor's Island

extension—all day long of every day in the week, and huge car floats bring to or take away from the military reservation long strings of filled or empty freight cars, with huge locomotives puffing over the twenty miles of tracks on the island, where formerly a ten-minute gallop on horse-back sufficed to cover the entire circuit of the reservation for the army officers stationed there.

There is a good story in connection with the Governor's Island improvement that ought to go down in history. Before a single foundation stone was laid for the new sea wall of the larger island, bids were asked for establishing and maintaining a light at the southern-most end of the proposed extension, "with a vessel anchored at the point." The successful bidder received, it has been said on good authority, ten dollars per day for providing "a vessel at anchor"—besides pay for the services of a watchman at all hours on board the vessel. It has been told and never denied that the successful bider paid one hundred dollars for a little schooner and had her towed out to the point where the light was to be maintained. At high water the little schooner was maneuvered directly over the shoal, with some difficulty, settling down gracefully on the rocks at low water, and from that day until her presence was no longer necessary, about five years in all, she drew ten dollars a day for her lucky owner. When time came to remove the "vessel at anchor" they picked the loose boards and beams and loaded them on a float, for the schooner would have crumbled into pieces had a tow-line been fastened to her. Some eighteen hundred days at ten dollars per diem seems a fair return for an initial and total investment of something less than two hundred dollars.

Thus we have shown that, besides offering the greatest natural shelter of any port in the world, the most extensive dock facilities, anchorage facilities and harbor transfer facilities, the Port of New York also may boast one of the greatest harbor-island military bases, one of the show spots, surely, of the port, and one of the most important harbor improvements ever undertaken.

There are still greater improvements contemplated for New York Harbor, chief among which is the belt line elevated structure which, it is planned, will provide a continuous freight route touching at every pier along the Hudson and East Rivers, obviating the present necessity of rehandling freight to and from shipping, which is growing in volume every year. Such a plan would do away with much of the harbor congestion in that the cumbersome freight-car floats would no longer be needed to transport freight cars from one section of the port to another between railroad terminals and the steamship piers.

No outline of the Port of New York is complete without a mention of the fishing fleet, a most formidable adjunct to the port's commercial importance. Of course fishing is not done on the same picturesque lines—from out of New York harbor—as it was done in former years; but there is still considerable activity in the famous Fulton Fish Market, which has held its place at the same location through all the years and through the various periods of modernizing. This applies equally well to the fisher folk as to the vessels they use in their trade and the manner in which they dispose of their wares. The advent of cold storage has taken much of the quaintness out of Fulton Market but every now and then there is a report of an old-time race between rival fishermen and the arrival of the swift, clean-cut although smelly fishing boats is always a matter of excitement and speculation along the East River water front.

There has been rapid and splendid improvement in steamship piers during the last ten years. The advent of the Mauretania and Lusitania made the change of pier facilities imperative and the arrival of the Lusitania, the pioneer giantess of the seas, at the newly constructed Chelsea piers, then still uncovered, was an event that drew hundreds of thousands of persons to the section of Manhattan just above Gansevoort Market. Before those days the ships of the Cunard Line, like those of the White Star Line, berthed just below Gansevoort Market, the piers now occupied by the Southern Pacific Company. The French Line used an old pier structure at the foot of Morton Street, while the American Line had its New York Terminal at the old piers at the foot of Cortland Street. The structure and roof of the old French Line pier was the original roof of Mechanics Hall of the Centennial Exposition and was brought over from Philadelphia in 1876 and placed over the open Morton Street pier. The historic pier structure was removed when the French Line moved to the new Chelsea pier and floated down the Hudson River to a junk yard. The sight of the historic pier being towed to a South Brooklyn "graveyard," where old ships and marine junk are gathered prior to being made over into salable parts, was one of the events in the harbor the day the old Mechanics Hall roof came drifting around the Battery on her way to the Brooklyn shore.

In a resume of the statistical history of the Port of New York, former Collector of the Port, Byron R. Newton, brought some interesting figures showing the growth of commerce in New York viewed from a shipping standpoint. Including the coastwise trade, said Mr. Newton some time ago, the commerce of the Port of New York amounts annually to the enormous figure of more than

five billions of dollars and the more interesting thing is that, so far as human vision can reach, the Port of New York has just begun to grow. Ordinary statistics are uninteresting but the statistics of the port of New York tell a story of magical growth. In the year 1850, Mr. Newton points out, the foreign commerce of the port of New York, imports and exports, amounted to $163,336,313. In the year 1917—sixty-seven years later—the foreign commerce of the port amounted to $4,391,318,859, an increase of nearly four and a half billions, or a growth of 2,700 per cent in sixty-seven years. In 1850 the port of New York transacted 49 per cent of the import and export trade of the United States; in 1917 it transacted 50.2 per cent, showing through the interim of sixty-seven years a marvelous development and growth, during which time many other ports of foreign trade were established in this country. The port of New York has not only maintained its proportionate standard of commerce in 1850, but has made an advance. It will thus be seen that through this one gateway of the hemisphere on the Atlantic seaboard there passes each year more than one-half the foreign commerce of the country. While the commerce of most of the other ports of the world has materially diminished during the period of the world war the commerce of the port of New York has steadily grown, as will be seen by the following table of imports and exports of merchandise at the customs district of New York during the fiscal years from 1912 to 1920, inclusive:

Year	Imports	Exports	Total
1912	$ 975,744,320	$ 817,945,803	$1,793,690,123
1913	1,048,329,629	917,935,988	1,966,265,617
1914	1,040,380,526	864,546,338	1,904,926,864
1915	931,011,058	1,193,581,088	2,124,592,146
1916	1,191,865,982	2,332,286,213	3,524,152,195
1917	1,338,199,355	3,053,119,504	4,391,318,859
1918	1,251,386,373	2,613,048,763	3,864,435,136
1919	1,443,504,899	3,204,992,419	4,638,497,318
1920	2,892,621,089	3,283,873,342	6,176,494,431

The above table not only shows the remarkable growth of the commerce of the Port of New York at the end of the fiscal year of 1920 but taking in consideration that the total imports of the *entire country* during 1920 were $5,278,481,490 and the total exports of the country were $8,080,480,821 during the same fiscal year, shows that the Port of New York's imports during that year were 54.8% of the total imports of the entire United States and the exports 39.91% of the country's total. If anything were needed

to show the pre-eminence of New York as a commercial port these figures furnish the indisputable proof.

Nature's architect and development of the world's commerce have made the port of New York what it is, and these same factors will perpetuate and enlarge its importance as the commercial centre of the world. It is the natural, convenient and practical gateway to the great storehouse of the world today.

Figures covering the entrance and departure of vessels from the various world ports for the year 1920 are not available, with a few exceptions, at this time, but it may be pointed out that the comparison between New York and Antwerp, one of the important ports of Europe, show which way the "wind blows" in the matter of shipping supremacy. During 1920 45,637 vessels, aggregating 64,104,035 tons, entered and cleared United States ports, of which total 5,283 vessels entered and cleared from the Port of New York. If it is taken into consideration that there are twenty-six customs districts in the United States, of which the Port of New York forms one district, New York assumed the responsibility of nearly 10% of the total ship movements of the entire United States out of twenty-six customs districts. Of the total of 64,104,035 tons that moved in and out of the United States customs districts, the Port of New York moved a total of 17,404,188 tons, or between one-third and one-fourth of the total tonnage of shipping for the entire United States. As against the 64,104,035 tons of shipping that moved in and out of the Port of New York during 1920, but 20,703,000 tons of shipping moved in and out of the port of Antwerp during the same year and but 10,896,694 tons moved in and out of the port of Marseilles, another very active world port, during the same period.

New York, therefore, safely holds its place as the greatest commercial port of the world and it is to the business men of New York, the shipping men of New York, the marine insurance men of New York and to all those who have contributed in any way to advancing the port's interests as the greatest world harbor that credit should be given for this great commercial supremacy. It is in that spirit and the belief that any work purporting to portray the development of our Port would be sadly incomplete without fitting reference to the individual business interests which have been such vital factors in its growth, that the Sandy Hook Pilots have deemed it a pleasure to include in their book brief articles of interest regarding such concerns which, in many cases, will be found of very great historical value.

R. A. C. SMITH

Dock Commissioner of the City of New York during the administration of Mayor Gaynor

PORT FACILITIES

NO PORT in the world perhaps has developed to so great proportions in such a short period as has the Port of New York. Commenting on its phenomenal growth and its great facilities, Former Dock Commissioner R. A. C. Smith has to say:

"I shall always consider it a very great privilege to have represented the City of New York in its port administration before and during part of the Great War. I came to the dock commissionership after a lifetime spent in close touch with maritime affairs, and a full realization of the magnitude of the task of operating the greatest port in the world. It was not, however, until the actual outbreak of the war that the port was called upon to carry a burden which it was never designed to bear. How splendidly its facilities met the nation's need is now a matter of history. Federal, State and City authorities all worked in the utmost harmony.

"The orderly building up of the port for commercial needs did not stop during the war. In the four and one-half years of my commissionership, over seven and one-half miles of new commercial wharfage space was provided, including immense freight piers in South Brooklyn, and the finest passenger pier in the world on the North River at 44th street, Manhattan, the first of a series of piers which the City must eventually construct. These structures were planned under my administration before the World War, and were built during those critical days because the officials were big enough to see that the Port of New York was bound to go forward and that it must be kept the premier port of the world.

"The piers which were built served splendidly the purposes, helping out the army and navy by supplementing the Hoboken piers of the former German liners, which were used as the port of embarkation.

"Much has been said of the lack of organization of the port of New York—its congestion and the difficulty and expense with which business is done in this harbor. There is undoubtedly some truth in these criticisms and complaints; but that New York is the worst organized port in the world, as is so frequently stated, is very far from the truth. Many of the criticisms leveled at the Port are dictated from ignorance as to actual conditions and the underlying reasons for certain shipping practices which perhaps appear crude to the superficial onlooker. The Port undoubtedly suffers from lack of continuity of administration. The practically automatic changing of commissioners every four years does not make for efficiency; and it is difficult to secure competent men willing to make the great personal sacrifice involved in accepting the office of dock commissioner.

"Whether the plan recently adopted of an interstate commission will work out successfully remains to be seen. Much depends upon whether the development and management of the port is approached with a practical appreciation of its necessities. All of those sincerely interested in the future of the port will await with intense interest the production of practical plans by the interstate port authorities.

"There is one point which particularly interests pilots and those engaged in the navigation of vessels, and that is the constant tendency to encroach upon the fairway of the Hudson River. Both during my commissionership and prior to that time as chairman of the New York State Commission on Port Conditions and Pier Extensions, the matter was thrashed out very carefully with the Secretary of War, Hon. Elihu Root, and his successors, after numerous hearings before the N. Y. Harbor Line Board under the direction of its able staff of engineers headed by William M. Black, later Chief of Engineers; and the city formally pledged itself not to seek further extensions; to consider the Chelsea Pier extensions as temporary and to proceed in the carrying out of a program for taking care of the Leviathan type of passenger ships by constructing a great marine terminal in the neighborhood of West 44th street, already alluded to. The first step was the building of the 44th street pier, 1,000 ft. in length, 360 ft. slips with 44 ft. depth. The city should keep to its pledge and no further encroachments should be tolerated.

"Our entry into the World War prevented the construction of the Staten Island piers, and other improvements on lower Manhattan, which have since been carried out by the city."

THE PORT OF NEW YORK AUTHORITY

THE difficulties under a divided jurisdiction of two States and more than a hundred municipalities have heretofore precluded a rational and co-ordinated development of the Port of New York's great natural advantages.

Realizing what it meant to both States, New York and New Jersey in 1917 created a Commission made up of representatives of the two States and provided funds for the study of this problem.

The creation of the Port District and the New York Port Authority, is the outcome of this study.

Under laws passed by the States of New York and New Jersey, the Port Treaty or compact, was signed on April 30, 1921, by the designated representatives of each State. By this Treaty, both States agree to, and pledge to each with the other faithful co-operation in the future planning and development of the Port of New York, holding in high trust for the benefit of the nation the special blessings and natural advantages thereof.

Thereby was created the Port of New York District, extending roughly from the City Hall, in Manhattan, 25 miles to the north, 16 miles to the east, 23 miles to the south, and 20 miles to the west; including the principal communities within what has been been called the Metropolitan District in New York and in New Jersey.

By the Port Treaty there was created and placed in jurisdiction over this district the Port of New York Authority, a public corporation made up of three men appointed by each State.

The Congress of the United States, realizing the value of co-operation between the communities in the development of the Port, approved this compact, and its approval was signed by President Harding on August 23, 1921.

The members of the Port Authority are Eugenius H. Outerbridge, of New York, Chairman; J. Spencer Smith, of New Jersey, Vice-chairman; Commissioners Alfred E. Smith, of New York, Lewis H. Pounds, of New York, De Witt Van Buskirk, of New Jersey and Frank R. Ford, of New Jersey. Offices are maintained at 11 Broadway, New York City.

The Port Authority is directed by law to make studies, conduct investigations, hold hearings and conferences, and to submit a comprehensive plan for the development of the Port District based upon the results of such studies, investigations, hearings and conferences, together with recommendations for such legislation as they may deem appropriate for the effectuation and consummation of such plan.

THE AMERICAN BUREAU OF SHIPPING

ONE of the feats already accomplished in our nation-wide efforts for the rehabilitation of our merchant marine, was the building up and establishment on a firm foundation of America's classification society, the American Bureau of Shipping.

This desideratum was early recognized as one of the principal obstacles to overcome in the renaissance of our ocean shipping, for without it we would still be dependent upon the classification facilities of our leading rivals in shipping, in order to aid in accomplishing that vital concomitant of a merchant marine, a successful marine insurance system controlled within our own borders by American companies. A group of the leading American ship-owners, marine underwriters and shipbuilders early in 1916, after debating various ways and means of accomplishing this object, decided that the best method of procedure would be to but breathe the breath of life in the then somewhat somnolent American institution known as the American Bureau of Shipping. This organization chartered by the State of New York, had then been in existence for nearly half a century, but on account of comparatively small needs incident to an inconsequential merchant marine, had very limited facilities for undertaking what was then seen by these men of vision, the classification of the immense fleet necessary to put the United States on the map as a contender in the ocean carrying trade. Donations of sufficient amount were immediately forthcoming from the patriotic supporters of the necessary reorganization, and Mr. Stevenson Taylor, a man well known and respected in the shipping industry and who possessed the necessary qualifications for this great undertaking, was unanimously agreed upon to head the organization. How well he, with the patriotic backing of many leading Americans has succeeded in the task, is well shown in the success of the bureau today.

Overcoming almost insurmountable obstacles the organization was built up to such a point of efficiency that the United States Government, by Act of Congress approved June 5th, 1920, gave it recognition, and declared it to be the official classification society for all branches of the federal government. It also, by the same act, placed two representatives, one from the Shipping Board and one from the Department of Commerce, on its executive committee.

As a result of all these efforts, this society is today capable of furnishing recognized and reliable classification in this country for all American owned vessels, without recourse to the long established classification agencies of our foreign competitors. Its surveyors

may be found at all the larger American seaports, and at all places where ships are built or ship material is manufactured in this country.

Now that the great rush of shipbuilding in this country has subsided, and we are about to enter upon normal conditions in all branches of industry, the managers of the society are engaged in perfecting various details which a national classification society should undertake, in order to make it of the greatest value in building up our merchant marine in all its branches.

As our ships emerged from the building yards and became engaged in transporting our goods to the various ports of the world, it became incumbent upon the Bureau to expand its facilities for survey work at such leading parts of the globe, where they could be of the greatest service to our shipping. Hence, its Board of Managers appropriated a sufficient sum of money to establish exclusive agencies, after thorough investigation as to our needs, at ports most frequented by our merchantmen. Already competent surveyors, American citizens carefully selected, have been located at such ports as Shanghai, Hamburg, Antwerp, Havre, Bordeaux, Buenos Aires, Rio Janeiro, San Juan, Porto Rico, Havana, etc. Non-exclusive surveyors of the Bureau are to be found at nearly all ports where American ships may call, and as rapidly as our trade expands and the conditions warrant, exclusive surveyors will be detailed from the trained force at home, to the principal ports not now so covered.

An alliance has been entered into with the British Corporation, the Registro Navale Italiano and the Imperial Maritime Corporation of Japan, whereby all classification work in this country for those societies and all American Bureau inspections in ports of those countries will be looked after by the recognized exclusive surveyors of each nation. At certain other ports throughout the world exclusive surveyors for the members of the alliance will be maintained, where otherwise the conditions might warrant the employment of non-exclusive surveyors only for the individual classification societies.

Recognizing the growing importance of internal combustion engines, and the inadequacy of all existing classification rules for engines of this type, the American Bureau has recently thoroughly revised its rules for this type of motive power. They are to be promulgated at the beginning of the year, and all who have seen them unite in the opinion that they are the most comprehensive rules yet prepared. In addition to the services of its own technical committee on engineering, the Bureau has had the coopera-

tion and advice of a committee of engine manufacturers representative of the industry in this country.

The Bureau's policy will be conservatively to modernize or amend its rules from time to time to keep pace with scientific advancement in the art of ship and engine building, or to recognize and give the advantages of classification to those branches of marine construction which hitherto has, in a manner, been subordinated or ignored by the recognized classification societies. An important field of this kind is believed to be the standardization of rules governing the construction and equipment of the various types of harbor and river craft, such as barges, tugboats, railroad floats, river steamboats, both passenger and freight, etc., and the Bureau will shortly undertake to prepare some special rules to encourage this type of classification. Marine insurance underwriters of great experience believe that such procedure would be of benefit in eventually reducing insurance rates on this class of risks.

THE UNITED STATES SHIP OPERATORS' ASSOCIATION

By Chas. H. Potter.

THE SHIPPING BOARD, hampered by lack of tradition and of shipping policies developed during long years of experience, was confronted with the question of disposal or operation of an unprecedented amount of tonnage. In seeking the solution of this problem—the establishment of a sound national shipping policy—the Board was greatly embarrassed and hindered in its work by the various and often conflicting recommendations and criticisms with which it was overwhelmed by commercial and political interests scattered throughout the country.

During this period the American Steamship Owners' Association was playing its full part in endeavoring to shape the future of our Merchant Marine. But its efforts were seriously handicapped by the fact that it represented and controlled only the owners of tonnage while numerous non-owning shipping companies which had been in business for many years, together with others operating Shipping Board tonnage which had come into existence since 1915 and which were entitled and destined to play their part in the future of the Merchant Marine of this country, were subject to no guiding influence and were without any group protection.

The necessity of co-ordinating these new interests and bringing them under the guidance of a common organization which would not only protect their rights and concentrate their influence and activities behind a sound, conservative national shipping policy, brought into being the United States Ship Operators' Association which was incorporated under the laws of the State of New York in October, 1919, to promote and advance the economical management and operation of American vessels, government-owned or otherwise; to cooperate with the United States Government officials and to facilitate the administration of its bureaus, having jurisdiction over maritime matters; to work for the improvement of laws, regulations and rulings and to secure uniformity in customs and usages, in relation thereto; to diffuse accurate marine information and to strengthen and enlarge friendly intercourse between men engaged in and about ships and shipping to the end that the Merchant Marine of the United States may attain its greatest efficiency.

The United States Ship Operators' Association, Inc., has grown until it numbers among its members seventy steamship companies who are geographically located along the entire seaboard of this country. The officers for 1921 are: Charles H. Potter, of New York, President; C. D. Mallory, of New York, Vice-President; F.

H. Hasler, of New York City, Secretary; Marcus H. Tracy, of New York, Treasurer; Robert Strange, Counsel. Owing to the number and location of the members from Maine to California, it has not been practical to hold frequent meetings of all the members and the active work of the Association has developed upon the Governing Committee.

The members of the Governing Committee are: F. E. Hasler, Charles T. Megee, C. H. Potter, Marcus H. Tracy, J. T. Lykes, Warren A. Blake, Clifford D. Mallory, Winchester Noyes, James Nunoz, Matthew Hale, C. H. Callaghan, Willis D. Benson, H. K. Nutting, Charles Yates and Albert R. Lafonta.

Due to the constantly changing relations between the Shipping Board and the Operators of Government tonnage, the work of the representatives of this Association on the Standing Committee on Managing Agents' Agreement with the United States Shipping Board, has been of the utmost importance.

This committee grew out of a joint endeavor on the part of the American Steamship Owners' Association and this Association to establish a medium of contact between the operators and the United States Shipping Board. Through this committee the members of the Association are given a direct approach to the Shipping Board for all interpretations, recommendations and complaints. Likewise it is a source from which the members will be kept promptly and accurately advised of matters pending before the Board. The highest commendation of the work of this Committee is the recognition it has received from the Shipping Board.

The establishment of a sound and stable American Merchant Marine in which its members will be co-builders and co-partners freed from unnecessary and unwise supervision, is the objective of the United States Ship Operators' Association.

TODD SHIPYARDS CORPORATION

FROM the moment a ship leaves the construction way it is subjected to incessant and gigantic strains. Exerted against it is every force of nature. No fabric of man is required to meet more severe tests. A modern maritime nation therefore cannot rest by merely building ships; it must provide adequate facilities for the maintenance of its argosies.

Repair and re-fitting today demand ability to perform prodigious work with prodigious speed. The loss on an inactive ship is tremendous and every hour spent in a repair yard counts. A modern ship-repair plant must be able to accommodate every ship instantly and to begin work on it instantly with every resource of power—brain power, tool power, shop power, and the power to command material and supplies.

America is exceptionally fortunate in its ambition for maritime supremacy in having within its harbors the greatest ship-repair organization in the world; the Todd Shipyards Corporation. The Todd organization has attained this enviable international distinction by its ever-ready ability to handle any class of repair job offered, big or little, with thoroughness and despatch.

During the great World War when the never-ending cry was "Ships, ships, give us ships," and every American yard was taxed to its very utmost capacity, the great Todd organization functioned smoothly and efficiently and when a job came into any one of its yards under seemingly impossible completion conditions it was done, and done on time. Like President Grant, "Bill" Todd, as he is known throughout the shipping world, believes the way to do a thing is to do it. When Grant ordered resumption of specie payments all the great financiers of his day raised their voices in holy horror and said it would bankrupt the nation; that it was an impossible thing to do. They asked him how specie payments could be resumed with practically no specie to resume with. He said, "Gentlemen, the way to resume is to resume. We have resumed." So it is with William H. Todd, the guiding genius of the Todd Corporation. When a thing needs to be done it is done.

The organization which has been brought to such a high state of efficiency by Mr. Todd is a federation of expert men and great plants for united application of the best modern industrial practice to every kind of shipwork from construction to interior decoration. It is equipped to build any vessel from ocean liner or warship to river barge. It possesses unsurpassed facilities for repair, remodelling, lengthening and refitting of ships of any character and for any service. It has made world records in the handling of the biggest repair jobs that have ever been sent to American yards.

WILLIAM H. TODD

The main offices of the Corporation are at 25 Broadway, New York City, from where the activities of its nine plant units are directed; six on the Atlantic, two on the Pacific coast, and one in England. The Robins Dry Dock and Repair Co., the Tietjen & Lang Dry Dock Co., the Tebo Yacht Basin Co., the Clinton Dry Docks, Inc., The Erie Basin Towing & Hoisting Co., and the White Fuel Oil Engineering Corporation are the Atlantic coast plants located on the waters of New York harbor. The Todd Dry Dock & Construction Corporation of Tacoma, Wash., and the Todd Dry Docks, Inc., of Seattle, Wash., are the Pacific coast plants and Todd Oil Burners of London, England, is the new subsidiary across the sea.

The united resources of the yards and plants of the corporation comprise more than 200 acres of land and service area. There are two graving docks, twenty-one floating dry docks, twelve shipbuilding ways, twenty-five piers, one hundred and ten shops, eight power plants, ten service vessels and seventeen thousand employees.

Co-operation binds all the organizations, yards and plants of the Corporation into one powerful whole which is at any moment capable of concentrated effort. In all other respects, however, each organization is an independent unit for itself, with its individual prestige to maintain. This makes for exceedingly sharp competition between them all for achievement, efficiency, speed and economy; but there is free interchange of knowledge and experience, mutual enjoyment of inventions and improvements and, when necessary, exchange of resources.

Each plant is not only a unit in itself, but the unit principle is so applied that every vessel obtains unit treatment precisely as if it were the only vessel in a yard devoted entirely to it. This concentrated individual attention is made possible by ample berthing spaces and dockage capacities, an abundance of experienced workers, and every modern facility for applying power in all its forms directly to every ship. The combined capacity and resources of the Corporation permit the handling of more than one hundred and fifty ships at once under this concentrated unit plan of operation.

There is also still another feature of the Todd system that has contributed in no small measure to the exceptional efficiency of the organization and that is the ample provision made for the care and comfort of Todd employees. In each yard a "safety" engineer systematically and continuously conducts an educational campaign to interest the men in "Safety First" measures. Bulletins, graphically descriptive of the right and the wrong way of using tools, are posted in prominent places throughout each plant. Monthly tables show-

ing the percentage of accidents reported from each department during the month with short articles showing how many of them could have been averted are published in the house magazine, *The Keel.* The results of this work are highly satisfactory. The reports of the safety engineers each month show a steady decrease in the number of avoidable accidents and carelessness has been eliminated to a remarkable degree.

Each of the plant units also possesses a fully equipped emergency hospital, attended by a competent surgeon and a staff of graduate nurses. So long as men are at work in the yards or shops, whether during regular hours or overtime, the hospitals are kept open in all departments. The efficient functioning of these hospital units has saved many lives. Each of the hospitals are equipped with the most modern surgical and medical appliances. The equipment includes the latest X-ray and fluroscopic apparatus, electrical apparatus for administering d'Arsonval, thermofardic and sinusoidal electricity, magnets for the removal of steel from the eye, pulmotors, as well as the necessary instruments for all minor operations and for emergency major operations.

Recognizing the fact that "all work and no play makes Jack a dull boy," the executives of the Corporation encouraged and aided in every way possible the formation and activities of the Todd Shipyards Athletic Association. As members of the Association, Todd employees have won high places in track and field events of every nature; baseball, bowling, basket-ball and soccer football. Both the teams of the Robins Dry Dock and Repair Co. and the Tebo Yacht Basin Company have won the championships of many of the leagues and their fame is known to every amateur fan in the country.

In the foregoing paragraphs the writer has endeavored to briefly portray the physical properties of a great commercial organization from the viewpoint and observations of one who has piloted many of its products in and out of New York harbor. From the same viewpoint the writer is prompted to say in closing that in a general survey of the accomplishments of the Todd Corporation; of the extraordinary tasks the burdens of commerce and the fortunes of war have from time to time assigned to it; of the masterly manner in which such tasks were executed; of the technical and mechanical ability the stress of need brought out in its organization; and of the brilliant feats accomplished in the face of overwhelming odds, the observer is given abundant reason for believing that the Todd Shipyards Corporation will ever be one of, if not the greatest, factor in restoring and maintaining the Stars and Stripes supreme on the great highways of the sea.

ORIGIN AND GROWTH OF THE CUNARD LINE

A NAME well known and honored wherever steamships float is that of Samuel Cunard, founder of the Cunard Line and pioneer of the Atlantic ferry. He was born in Canada in 1787 and was the son of an American citizen of Philadelphia, who had settled in Halifax, Nova Scotia.

In the course of years, Mr. Cunard became a leading merchant and shipowner in Halifax. He had been engaged in carrying on the mail service between Boston, Newfoundland and Bermuda and was among the earliest to recognize the advantages possessed by steamers over sailing vessels for regularity of schedule.

For some time he had pondered over developing a regular service of steamers between England and America. The mails for the United States were being sent over in sailing vessels and during the year 1838 the British Government had sent circulars broadcast inviting bids for a faster and more reliable means of transit for postal matter by steam vessels. One of these circulars found its way into the hands of Samuel Cunard and he immediately concluded that here was a golden opportunity to carry out his project under the auspices of the British Government.

Unable to raise the necessary capital in Halifax, where the merchants did not look with favor on his scheme, Mr. Cunard sailed for England, resolved to raise sufficient capital to put his ideas into practice. He was now fifty years old. He received but little sympathy in London, but he had a letter of introduction to Mr. Robert Napier, a shipbuilder on the Clyde, so he went to Glasgow. Mr. Napier welcomed Mr. Cunard, and introduced him to the two ablest shipping men in Great Britain—Mr. George Burns of Glasgow and Mr. David MacIver of Liverpool, both of whom were engaged in the coasting trade between England, Ireland and Scotland. Between these three men the necessary capital—£270,000—was subscribed for and Mr. Cunard was in a position to submit to the Commissioners of the Admiralty (who at that time were invested with the disposal of postal contracts) a tender for the conveyance of mails once every two weeks between Liverpool, Halifax and Boston for an annual subsidy of £60,000 per annum.

This tender was lower than that made by the owners of the steamship "Great Western," Mr. Cunard's principal rival, and was accepted by the Admiralty and a contract for seven years was concluded between the British Government and the North American Steam Packet Company, which was the original name of the Cunard Line. Mr. Cunard opened an office in London, Mr. Burns presided at the headquarters of the company in Glasgow and Mr. MacIver remained in Liverpool to prepare for the inauguration of the service.

S. S. AQUITANIA OF THE CUNARD LINE

The Aquitania is 901 feet long and of 45,647 gross tons

To carry on this trade four steamers, the "Britannia" (launched February 5th, 1840), "Acadia," "Columbia" and Caledonia," were built of wood by Robert Duncan & Co., and other shipbuilders at Port Glasgow, each being 207 feet long, 34.4 feet broad, 22.4 feet deep, and of 1,154 gross tons. Each had an indicated horse power of 740, a cargo capacity of 225 tons, and accommodations for 115 cabin passengers. The average speed was 8.5 knots on a coal consumption of 38 tons per day. All, of course, were paddlewheelers and they were the first passenger steamers to make regular sailings across the Atlantic.

The first voyage of the "Britannia," the pioneer vessel of the Cunard fleet in 1840, deserves to rank not only as one of the great events of the last century, but as one of the epoch-marking incidents in the history of civilization. It signalized the dawn of that organized ocean travel of which there have since been such mighty developments. Rather more than a score of years previously the "Savannah," built in New York City, a steamship of 350 tons, was the first steam vessel to cross the Atlantic, sailing from Savannah May 25, 1819, for Liverpool, and arriving there June 29th, after a passage of 35 days. She did not rely solely upon her paddlewheels; in fact, she trusted more to her sails, being under steam for less than 100 hours. In 1831 the "First Royal William" made the entire voyage under steam.

No further steam venture was made until the 4th of April, 1838, when the "Sirius" left London for New York with 94 passengers aboard, and she was followed from Bristol four days later by the more historic "Great Western"—the first steam vessel specially built for the Atlantic passage. The "Great Western" made the trip in 15 days, two days less than the "Sirius," and with 200 tons of coal still left in her bunkers. This result was regarded as wonderful. The scientific men of the time had "proved" to the satisfaction of most of the world that no steamer could carry coal enough to feed her fires for a single trip across the Atlantic.

The "Britannia," with 64 passengers aboard, started on her maiden voyage from Liverpool to Boston on the 4th of July, 1840, the celebration day of American Independence, in the presence of an immense assembly, and on her arrival in America 14 days and 8 hours later, including a stop at Halifax—then considered a rapid passage—she was the object of an unprecedented ovation from the inhabitants of Boston, culminating in a magnificent public banquet at which their enthusiasm found vent in speeches of a most complimentary nature. Mr. Cunard, who accompanied the "Britannia"

on her maiden trip, was made the hero of the day, receiving as many as 1,800 invitations to dinner within twenty-four hours after landing.

Later—in the very severe winter of 1844—the merchants of Boston gave practical proof of their good will when the "Britannia" was icebound in the harbor and the mails imprisoned. At their own expense they liberated the ship by cutting a canal in the ice seven miles long and 100 feet wide. The "Britannia," released from her bonds, reached Liverpool in 15 days. When the British Post Office Department offered to defray the expense of the cutting of the ice channel, the citizens of Boston declined to be reimbursed.

The mail service was carried on with conspicuous regularity for three years when it was found that additional tonnage was necessary. The "Hibernia" was added to the fleet in 1843 and the "Cambria" in 1845. In 1847, when the Company's first mail contract had expired, the commercial relations between Great Britain and America had increased to such an extent that the British Government decided to double the Atlantic mail service. A new contract was entered into with the Cunard Line providing for weekly sailings from Liverpool to New York and Boston alternately, the Boston steamer touching at Halifax, and the subsidy was raised to £173,340 per annum. This contract covered twenty years—until 1867.

For the adequate accomplishment of this important agreement four new ships were built—the "America," "Niagara," "Canada" and "Europa"—and took their places in the service early in 1848, being followed in 1850 by the "Asia" and "Africa" and in 1852 by the "Arabia." Each was built of wood, of improved designs, as experience pointed out, but with no radical departures from the "Britannia" until the year 1856, when the "Persia," the first iron steamer owned by the line, was put into service to maintain the supremacy of the sea, which was now being contested by other lines, notably the Collins Line, organized in 1848 by merchants of New York, Boston and other American ports, and heavily subsidized by the United States government.

The Collins Line vessels entered the Atlantic ferry in 1849 and were first class in every way, having been constructed in New York City with a view to eclipse those of the Cunard Line, and keen rivalry existed between the two companies. The struggle was a fierce one while it lasted. The Cunard Line would sacrifice nothing that was calculated to prejudice the safety of their ships or the lives of their passengers. New and better ships were added. Freight and passenger rates were enormously reduced and the competition for public favor became intensely exciting. This contest lasted for four

years when the "Arctic" of the Collins Line was run into by a small French steamer off Cape Race in a dense fog and sunk with a loss of 322 lives, among whom were the wife, son and daughter of Mr. E. K. Collins, the managing director and promotor of the line.

Two years later another great disaster befell the company in the loss of the "Pacific," which sailed from Liverpool on June 29th, 1856, and was never heard of again. The United States Government refused to continue the subsidy and the Collins Line withdrew from the Atlantic in 1858.

The "Scotia," the last of the paddlewheel type and the finest specimen of the mercantile marine of the period, and a sister ship to the "Persia," came out in 1862. For years these two ships were the most popular on the seas, conducting the first express service across the Atlantic, and getting a higher rate of fare than other ships. The "Scotia" held the world's record for the time—from Liverpool to New York in 8 days and 22 hours.

So far the Cunard Company, the progress of which is virtually a history of modern shipping, had in deference to the preferences of most travelers at that time, adhered to paddlewheel propulsion, but the officials of the company were nevertheless convinced of the superiority of the screw propeller, which marine engineers had long been actively advocating. The line had been using screw steamers in the Mediterranean service and the Inman Line had already introduced the screw system in their Atlantic service. In 1862 the Cunard Line decided for the future to adopt the screw and the "China" was ordered, her length being 326 feet; breadth, 40½ feet; tonnage, 2,539; indicated horse power, 2,250; average speed, 13.9 knots.

Having adequately fulfilled the expectations of her owners and builder, the "China" was followed in 1865 by the "Java," and two years later by the "Russia," the latter steamer generally regarded as the most beautiful ocean-going vessel then in existence. Her graceful proportions were regarded by practical men as the acme of nautical symmetry, and the beauty of her decorations and completeness of her equipment were the delight of passengers. She proved to be one of the flyers of her day, crossing from New York to Queenstown in 8 days and 28 minutes. She was 358 feet long and of 2,960 gross tons. She consumed 90 tons of coal per day, compared with the 159 tons consumed by the "Scotia" to attain the same speed. She had accommodation for 235 cabin passengers and a cargo capacity of 1,260 tons. Her commander, Captain Cook, navigated her no less than 630,000 miles without a single mishap or casualty of any kind, carrying the while 26,075 cabin passengers.

The company's postal contract with the Admiralty expired on Dec. 31, 1867, and a new contract for one year was entered into with the Postmaster General (to whose department the arrangement of carrying mails on ocean steamers had been transferred) whereby the Cunard Company undertook to sail a vessel from Liverpool to New York every Saturday, calling at Queenstown; returning from New York every Wednesday and also calling at Queenstown.

Owing to the competition which then existed for the carrying of the mails, the Post Office was able to dictate terms for the service, and accordingly the subsidy allowed was only £80,000. That sum was further reduced to £70,000 the following year when a contract was concluded to cover seven years, binding the company to maintain a dual weekly service from Liverpool—sailing to Boston every Tuesday and to New York every Saturday, calling at Queenstown.

It was found that the amount paid for the service was manifestly inadequate, and when the mail contract was again renewed in January, 1877, the work was paid for in accordance with the weight of the mail matter carried.

In 1870 the company adopted the compound principle for their engines, in preference to the old side lever system. The "Parthia" was the first vessel of the line fitted with compound engines, which, utilizing steam at high pressure, gave better speed results than engines of the old type. She was followed by the "Bothnia" and "Scythia" (1879) also fitted with compound engines. The newer existing vessels were similarly refitted. The "Gallia," launched in 1879, and the last iron Cunarder to be built, was fitted with three-crank compound engines.

Thus in the gradual development of this line may be traced the progress of the shipping industry in general, and in the substitution of new ships of superior types the advance of science in relation to the steamship and marine steam engine may be closely followed. The same spirit of progress prevails in the company today. Thus all new steamers burn oil fuel, and big ones like the "Aquitania," "Berengaria" and "Mauretania" originally built to burn coal, have been converted into oil burners.

The company's first steel liner, the "Servia," built in 1881, was practically the pioneer of what may be called the Express Transatlantic Service, as owing to the immense space required for the powerful machinery necessary for the high speed beginning to prevail, but little room was left for cargo. She was the first Cunarder to receive an electric installation. Her gross register was 7,392 tons and with her speed of 16.7 knots she reduced the Atlantic pass-

THE CUNARD BUILDING

25 Broadway, New York City

age to 7 days 1 hour and 38 minutes. She was superbly fitted for those days and provided accommodation for 480 cabin and 750 third class passengers.

In 1884 the "Oregon," built for another Atlantic line, was purchased by the Cunard Company. She attained a speed of 18 knots and was famed as the "Greyhound of the Atlantic." This sensational result led the directors of the company to order from the same builders two new vessels of greater power and speed—the "Umbria" and "Etruria." These two were, in their day, the fastest ships afloat, attaining a speed of 20 knots. The "Etruria" held the Atlantic speed record for some time—accomplishing the western passage in 5 days 20 hours and 55 minutes, and the eastern passage in 6 days 37 minutes. She was 500 feet long, with a gross tonnage of 8,110.

The "Campania" and "Lucania" (1893) were also blue ribbon winners. These beautiful ships were each 625 feet long, 65.3 feet broad, 43 feet deep and with a gross tonnage of 12,950. Their average speed was 22 knots an hour. The "Campania's" fastest passage between Queenstown and New York was 5 days 9 hours 6 minutes. The "Lucania" had a slight advantage over her sister vessel for speed, her fastest voyages being: Westward, 5 days 7 hours and 23 minutes; eastward, 5 days 8 hours and 38 minutes. It was on the "Lucania" that Mr. William Marconi personally experimented with and introduced wireless telegraphy. Now his system supplies news for use in the "Cunard Daily Bulletin," published at sea on all Cunarders.

The "Caronia" and "Carmania"—two ships beloved by the regular traveler—marked a distinct development in the liners fitted with luxurious accommodations for large numbers of passengers and also large cargo carrying capacity. These great steamers are 675 feet long and of 20,000 gross tons. They are sisters in every way but one—the "Caronia" is propelled by engines of the reciprocating type driving twin screws, while the propulsive power of the "Carmania" is derived from turbine engines whose force is distributed through three shafts, each of which drives one propeller. The "Carmania" was the first of the company's turbine liners.

The Cunard Line has always had to cope with strong opposition in its efforts to hold the blue ribbon of the sea. This was lost to the "Deutschland" of the Hamburg-American Line in 1900. This ship had a speed of 23½ knots. Two years later this steamer lost to the "Kaiser Wilhelm II" of the North German Lloyd, whose record was a fraction faster than that of the "Deutschland." The Cunard Line then decided to regain the speed supremacy which it

had held for so many years and prepared the plans for the "Lusitania" and "Mauretania." These vessels, were each 790 feet long and with a tonnage over 31,000, the greatest ships the world had yet seen. Attaining a speed of 26 knots per hour, the blue ribbon of the seas passed back to the Cunard Line and is still there. The "Lusitania's" best time westbound was 4 days and 15 hours. The fastest westward run of the "Mauretania" was 4 days 10 hours and 41 minutes. This express steamer represents all that is superlative in naval architecture, marine engineering and luxurious hotel accommodations.

The "wonder ship," as Lord Northcliffe calls the "Aquitania," entered the Cunard Service in 1914. She combined in her design and construction the result of the experience and valuable information deduced from the construction and performance of the "Mauretania" and the many other famous ships that preceded her under the Cunard flag. The "Aquitania" had only made three trips to New York when the World War broke out. She went in war service, at first as a transport, then as a hospital ship, and finally as a transport again, carrying many thousands of American troops. In 1920 she was reconditioned as an oil-burner and re-entered the trans-Atlantic service as its foremost passenger carrier. The "Aquitania" is 901 feet long, 97 feet broad and 92.6 feet deep. Her gross tonnage is 45,647 and her speed 23 knots. Her best time between New York and Cherbourg is 5 days, 11 hours and 28 minutes. On the last leg of a voyage to Cherbourg she made the record of 27.40 knots per hour for three hours. This is equal to 31 land miles. She has accommodations for 2,716 passengers and a crew of 900. The first and most obvious thing impressed upon the visitor is the extraordinary spaciousness and luxuriousness of her public rooms, comparing favorably with the highest grade metropolitan hotels.

In 1921 the "Berengaria," of 52,022 tons, was purchased by the Cunard Company and converted from coal to oil fuel. Today she is the largest passenger ship in commission. This year also marked the entry of the "Scythia" into the company's service. This ship is 600 feet long and registers 20,000 tons. Big as she is, she carries but one funnel, being the first big British ship to be originally designed and built as an oil-burner. Four more of her type soon to appear in the sailing list are the "Samaria," "Franconia," "Laconia" and "Servia." There is a sixth ship which closely resembles this type, the "Tyrrhenia," of 16,700 tons. All are oil burners.

The Cunard Line's Canadian Service, wiped out by enemy vessels during the war, reopens in the spring of 1922 with a fleet of new oil

burners averaging 14,000 tons each. They are the "Antonia," "Andania," "Alannia," "Ascania," "Aurania" and "Ausonia."

The well-known care and strict surveillance exercised in the construction of the vessels of the Cunard fleet and the rigid discipline maintained in every department of its service, have engendered in the public mind well-merited confidence and gained for the company a prestige unique in the annals of shipping.

The Cunard Line has now over a million tons of shipping.

BAKER, CARVER & MORRELL

THIS firm is a co-partnership, composed of Joseph B. Morrell and Amos D. Carver, and is a continuation of the business of Baker, Carver & Co., who succeeded to a business established at 29 South Street in 1827, and of J. B. Morrell & Co., who succeeded to the business of Watts, Parker & Co., established early in the century at 27 Old Slip, Franklin Market and 75 Front Street. Mr. Morrell joined the latter firm in 1875 and in 1888 acquired the business.

Baker, Carver & Morrell was formed January 1, 1894, by the consolidation of Baker, Carver & Co. and J. B. Morrell & Co. The firm was then composed of Howard M. Baker, Capt. George A. Carver, Joseph B. Morrell and Amos D. Carver. Mr. Baker retired January 1, 1900, and Capt. Carver retired January 1, 1901. Their interests were bought out and taken over by the present firm.

Mr. Morrell has spent 43 years in the business and has made it a very careful study, and is today, perhaps, the best informed ship supply merchant in the United States.

Mr. Carver is the third generation of his family actively engaged in this line, and has been in it for 38 years, and brings to bear a fitness, not only ripened by long experience, but by an expert technical knowledge of vessels operations generally.

Compared with 1894 the business of the firm has multiplied twenty times. Ninety-five per cent of a vessel's outfit is actually carried in stock in New York City in their own warehouses. It is the aim of the firm to always carry a complete stock.

The present home of the company was finished in 1912 and occupied April 9 of that year. It is of solid steel and concrete and is fireproof. It was built specially for the business and is occupied exclusively by the company.

Mr. Joseph B. Morrell of this firm is a member of the board of New York pilot commissioners, appointed by the Chamber of Commerce.

FAMOUS ROTUNDA OF THE CUNARD BUILDING

Noted for the surpassing beauty of its mural decorations

THE INTERNATIONAL MERCANTILE MARINE COMPANY

or the I. M. M., as it is popularly known, is the largest American Shipping Company.

NOT less than 117 fine ocean-going steamships, numbering the largest afloat, the Majestic, 56,000 tons, are included in its fleets. The aggregate tonnage of sea-going ships engaged in the company's operations is as great as was the tonnage of the entire American merchant marine registered for foreign commerce before the World War, or nearly 1,285,000 tons.

Today the sun never sets on I. M. M. ships, and in the changing seasons some of them are always sailing summer seas. Their keels fret every sea, and their flags are thrown to the breeze in the ports of nearly every maritime country of the globe.

While the great liners of the I. M. M. fleets are maintaining express passenger services with clocklike regularity on the Atlantic ocean ferry, other I. M. M. ships are plying to far distant ports in different parts of the world with passengers or freight, or both.

The I. M. M. is a national institution, giving service to the producers, shippers and consumers of goods in every section of the United States. Although its headquarters are in New York, its ships sail from all the principal American ports on the Atlantic and Gulf. Its constituent companies number some of the strongest and oldest under the American flag.

The American Line, one of the cornerstones of the company, is the oldest passenger line under the American flag engaged in trans-Atlantic trade. Established in 1871, the American Line for five decades has sustained the honor of maintaining the American flag in the North Atlantic passenger trade, most of the time alone. The names of the American Line ships have become household words to Americans who travel by sea.

A new and significant activity of the American Line was inaugurated in December, 1919, when this line established the first American passenger service between the ports of New York and Hamburg. The ships employed in it are American built and American manned. They fly the American flag, and are managed by Americans, from I. M. M. headquarters at New York.

The passenger ships employed in opening the Hamburg service of the American Line were the Mongolia of 13,600 gross tons register, and the Manchuria, a sister ship; and several large and modern freighters.

THE WORLD'S LARGEST STEAMSHIP

S. S. Majestic, of the White Star Line unit of the I. M. M. She is of 56,000 tons gross and will be placed in commission May, 1922

One of the strongest commercial ties between the United States and Belgium, long before these two countries were drawn closely together by their common sympathies in the great war, was the direct service between New York and Antwerp of the Red Star Line, one of the operating units of the I. M. M.

To think of communication between the United States and the great little country that was the theater of the most tragic scenes in the world's greatest war, is to think of the Red Star Line and its ships.

Two of the finest of these ships, flying the American flag are the Finland and the Kroonland. These vessels, built at the Cramp yards in Philadelphia, embrace in their design all the good points tested by years of service in the ships of the American Line. The same may be said of the other ships of this line, Lapland and Zeeland, some of which fly the Belgian flag, and others the British. The management of the fleet is entirely in the hands of an American operating staff.

One of the greatest units in the I. M. M. is the famous White Star Line, whose ships include some of the giants of the deep. Heading the list is the huge Majestic and the Olympic, the world's largest oil-burning vessels, two of the noblest of the leviathans that ply between Great Britain and the United States. These big ships, 56,000 and 46,359 gross tons, are 956 and 882.5 feet long respectively, many feet longer than the Woolworth Tower in New York is high.

In beauty and strength, as well as in size, these two ships rank among the greatest modern steamships.

Several other great vessels of the White Star Line are also of huge proportions and magnificent equipment. These include the Homeric, 35,000 tons; Baltic, 23,876 tons, and the Adriatic, 24,541 tons, the Cedric and Celtic, each of 21,000 tons and the Megantic of 14,878 tons.

The White Star service, maintained by these vessels, has been famous in the Atlantic passenger trade for generations.

Another important service operated by the I. M. M. is that of the Atlantic Transport Line between New York and London.

The war swept away some of the finest passenger ships of this line, but the Minnesota, 20,602 gross tons, the largest vessel built in an American shipyard, was spared. Pending the addition of new tonnage to replace lost ships, the sailings of the American Transport Lines are confined to freight vessels, which maintain a sailing every week between London and New York.

NUMBER ONE BROADWAY

Adjoining this site was the first Dutch fort on Manhattan Island, known as Fort New Amsterdam. The first house was erected here before 1664. In 1771 Captain Archibald Kennedy built here his residence which was used in 1776 by General Washington as his headquarters and later by General Howe during the British occupation. It was later used as a hotel. Torn down in 1882, it was replaced by the Washington building which was transformed in 1920-1921 into this building for occupancy by its owners, The International Mercantile Marine Company.

Other important service by I. M. M. lines include the New York-Azores-Mediterranean passenger line sustained by vessels of the class of the Cretic, 13,500 tons; the Boston-Liverpool passenger and freight service of the Leyland Line, and a long list of exclusively freight services from other American ports. In the development of these freight services, of which the public hears relatively little, the I. M. M. has made great strides in recent years with its American ships. Its freight sailings are frequent from the chief ports of the Atlantic and Gulf coasts—Montreal, Portland, Boston, New York, Baltimore, Norfolk, Mobile, Galveston, New Orleans—with occasional sailings from smaller ports such as Charleston and Savannah. The company maintains offices not only in the chief ports mentioned, for handling of its freight and passenger business, but also in San Francisco, Chicago, Minneapolis, St. Paul and St. Louis.

The vessels of the I. M. M. fleets carried more than one-quarter of the total American Expeditionary Forces across the seas, or a grand total of 521,913 men, between April, 1917, and November, 1918. Vessels of the I. M. M. fleets also transported 2,549 cargoes of munitions and war supplies, a grand total of 14,988,294 tons.

In the spring of 1920 the company purchased the Washington Building, known as Number One Broadway, an imposing structure facing Battery Park, and proceeded to remodel it for its own use.

A PIONEER IN ITS FIELD

THE STANDARD OIL COMPANY OF NEW YORK was one of the first concerns on the Atlantic seaboard to engage in the transportation of petroleum by water on a commercial scale.

The first lighterage organization was formed back in 1884, on October third, to be exact, with an initial equipment that consisted of five towboats and forty-six barges. These vessels were operated in and around New York harbor. To handle the constantly increasing volume of business that the intervening years have brought, this original fleet has grown into one that includes, today, twenty-nine towboats and two hundred and twenty-eight barges in addition to a large number of tank and general cargo vessels, all of which give employment to approximately twenty-eight hundred men.

When petroleum first began to be transported by water it was shipped, like other fluids, in barrels and cases, the average capacity of the vessels used being about eight thousand barrels and requiring about eight days to load. The large modern tanker of today was unknown and transportation in bulk by tankers had been very little developed at that time. In 1885, however, an important step forward was made in the water transportation of petroleum. The shipment of it in barrels obviously had many disadvantages. Accordingly this company took an old schooner, the "Amelia G. Ireland," and remodeled it by building several tanks in the hold, having an aggregate capacity of about two thousand barrels. This was the first oil barge to leave New York harbor and for several years plied between New York and Boston.

During the next decade or two the transportation of oil in these early types of tankers was carried on extensively but confined almost entirely to coastwise and Mexican voyages. However, in the latter part of 1904 a significant undertaking was planned which was destined to rank as a real achievement of its day. On December 16, the S. S. Atlas with barge No. 93 in tow, left New York harbor bound for San Francisco. The two vessels arrived at their destination February 27, 1905, completing what, up to that time, was the longest tow ever made of an oil barge. Considering the fact that this was the first venture of its kind and involved a passage through the Strait of Magellan, the time made was indeed creditable. A similar voyage was made the following year, the S. S. Maverick leaving New York on October 12, 1906, with barge No. 91 in tow and arriving at San Francisco January 2, 1907.

In the meantime another long towing voyage had been made which was of no little importance. In order to demonstrate the practicability of deep-sea towing, this company fitted out the S. S. Colonel E. L. Drake for a more or less experimental trip to Lon-

don. This vessel left New York, towing barge No. 95, on July 3, 1905, and reached London seventeen days later. After a stop of five days, it left London on July 25th destined for Port Arthur, Texas, where it arrived August 18th. Subsequently, similar tows have been made around the world. While the towing of oil barges has been engaged in successfully for the past thirty years, the modern self-propelled tanker is gradually and generally superseding this method of transportation. A recent development in the maritime activities of this company has been the transportation of petroleum products in bulk on the newly opened New York State Barge Canal by means of motor driven barges. After some improvements were made on the canal, the Standard Oil Company of New York was the first to take advantage of the opportunity it offered comparatively large-sized barges. The operations of this company on the canal have greatly facilitated the distribution of petroleum products in bulk throughout the middle, western and Lake Champlain districts of New York State. At the present time, a large part of this company's marine shipments are handled by the Standard Transportation Company, a subsidiary organization, which operates a large fleet of tank steamers. The vessels of this fleet ply between various points on the Atlantic and Pacific seaboard and the Levant, India, and the Far East. Large volumes of the multifarious petroleum products sold by the Standard Oil Company of New York are transported in bulk and in packages by the up-to-date vessels of the Standard Transportation Company.

The Standard Oil Company of New York feels that it may be pardoned for having a just pride in the share it has had in the growth of the Port of New York. It offers herewith its assurance of continuous interest in the greater development that the future unquestionably holds for it.

WORLD'S BIGGEST OIL FLEET

THE transportation of oil products by water is perhaps as old as the history of water transportation. While sailing vessels were first converted and later built for this purpose, the first tank steamer was built in 1872. The development of this method of transportation of oil in bulk from that time to the modern 20,000-ton steel tank steamers is a remarkable achievement.

The earlier construction by installation of tanks was subsequently abandoned because it was found that evaporation of leakage and escaping oil filled the spaces between the tanks and sides of the ships with explosive gases, which made this transportation even more dangerous than carriage by means of barrels and cases. No repairs could be made in these spaces, no naked lights used, and the insertion of hot rivets incident to repairs was out of the question until with great difficulty the gases had been eliminated. This resulted in the use of the vessel itself divided thwartships and longitudinally into a series of tanks to contain oil, with cofferdams at the forward and after ends of the oil spaces.

Some of the earlier tankers were simply cargo vessels converted by erection of bulkheads and partitions, which permitted the carrying of oil in the holds. On these vessels the propelling machinery and boilers were amidships, but later more satisfactory results were obtained, with minimized risk from fire, by devoting the entire after end of the ship to boilers, propelling machinery and quarters for the engine force. Consequently this type of tanker construction was adopted and is still in general use.

The majority of converted cargo vessels and the earlier constructed tankers were found unsatisfactory. As oil will find a leak more quickly than water, closer spacing of rivets and more careful workmanship is necessary to insure oil-tightness than water-tightness. This has developed to such an extent that tankers are now so tightly and strongly built that different grades of oil are carried in adjacent tanks in the same vessel without danger of contamination through leakage.

The modern tendency generally is toward the larger sized ships because it is found more economical both to construct and operate one large vessel than two small ones, and this applies with equal force to tankers.

Of course, most of the modern tankers burn oil and the auxiliary equipment, for instance, pumps for loading and unloading, are steam driven. The piping is larger and each year brings the addition of many other features of improvement in tanker construction, although the general principles date back to the first tankers.

The internal combustion engine has been successfully used for the propulsion of tankers and the recent successful performance of the electrically driven merchant cargo vessels no doubt portends the use of this mode of propelling power on tankers, provided, of course, proper and permanent insulation and protection of wiring can be secured to overcome any added fire risk in the proximity of the oil compartments.

During the recent war the size of the fleet of the Standard Oil Company (N. J.) was materially increased both by the purchase of foreign vessels and a very extensive construction program in American yards. This has had the results of making the Standard Oil Company (N. J.) possessor of the largest privately owned fleet of tank steamers in the world and operator of the largest privately owned fleet of vessels under American registry.

At the present time this Company owns 57 tankers of approximately 620,000 deadweight tons. The entire fleet operated by the Marine Department of the Company, including owned cargo vessels, barges, etc., and chartered tonnage, total 76 vessels, of over 745,000 deadweight tons. This fleet is engaged in the transportation of petroleum and its product between points of production and manufacture on the one hand and manufacture and consumption on the other. The majority of these vessels are above 10,000 deadweight tons, several of them being as large as 20,000 deadweight tons.

In the operation of this fleet the Marine Department directly employs 340 in shore positions, in addition to agencies at various ports throughout the world, and the seafaring personnel totals approximately 2,200 employees.

The house flag of the Standard Oil Company (N. J.) suggests to all steamship men of the highest standard of operating efficiency by perfect state of maintenance of hull and equipment, prompt dispatch and turn around, and successful operation. The explanation for this condition is undoubtedly to be found in the fact that the broad and liberal treatment accorded by the Standard Oil Company (N. J.) to its employees generally is extended to its seafaring personnel. Not alone do the seafaring personnel including masters, mates, engineers, firemen, cooks, stewards and seamen receive the advantages of other employes in insurance, benefits in instances of illness or disability, and an opportunity to receive, in the purchase of stock of the Company, the value of $1.50 for every dollar invested, but they enjoy the benefits of a bonus system which was inaugurated with the beginning of the year 1921.

This bonus system provides for payments to the particular personnel aboard ships directly responsible for the successful fulfillment of the principal elements entering into efficient operation. Records are maintained of the performance of all of the vessels according to these principal subdivisions of vessel operation, and the full bonus is paid only when 95% or more of the 100% standard set for each respective vessel has been attained. When the rating is between 95% and 100% of the fixed standard, only 50% of the indicated bonus is paid. The bonus in each instance is a fixed percentage of the annual salary received by each individual. If any one vessel attains 100% or more in all subdivisions upon which bonus is paid, the Captain and Chief Engineer receive an additional 10%.

This liberal policy of the Standard Oil Company (N. J.) promotes among its employees, both ashore and at sea, the highest degree of co-operation and contentment and permits the latter to enjoy additional benefits commensurate with increased diligence and efficiency.

The successful operation under the American flag of a fleet of the magnitude of that of the Standard Oil Company (N. J.) is perhaps one of the most encouraging and tangible justifications for belief in the practicability of establishing an American Merchant Marine the equal or superior to that of any other country.

BUSH TERMINAL—THE REALIZATION OF A GREAT IDEAL IN PORT DEVELOPMENT

ON INDICATION of points of resemblance between a great terminal for the accommodation of railroad and ocean traffic and between terminal stations such as are being constantly developed and improved in every great city in the land may serve to illustrate more clearly the fundamental necessity of the terminal plan. As a rule the familiar terminal stations in the city form points of interchange for passengers between through and local arteries of travel and converging points for one or more lengthy railway systems. They not only expedite the journeys of the traveller or commuter, but without them it would be impossible for the great cities to handle the millions of persons that yearly pour over their converging transit systems. Local traffic would be jammed, and the cross currents of humanity, lacking means of ready transfer at focal points, would meet in inextricable confusion.

The same principle underlies the rapid and economic interchange of sea and rail freight. If the streams of incoming and outgoing freight do no move easily and directly between steamer, freight car, or warehouse, the same confusing tangle will result as in the handling of passenger traffic. Recognition of the advantages of the terminal system is now general throughout the civilized world. It has evolved an economic principle of no mean importance to industry. Today an adequate terminal system is urged by foremost shipping men as a necessity to every modern port. In many instances the savings it has effected have been the factor which has stood between success and failure of business interests which have enjoyed its facilities.

The most comprehensive terminal system in this country was planned by a young man who saw the necessity of bringing the factory, the warehouse, the railroad, and the steamship into juxtaposition. That man was Mr. Irving T. Bush. As a result of his enterprise there has been developed at Bush Terminal, South Brooklyn, New York, the largest single coordination of industrial and shipping facilities in the world. It is not too much to say that a knowledge of Bush Terminal is essential to a full understanding of modern port development. It forms a striking and definitely worked out illustration of the inter-relation of industry and distribution. It has the only co-operative grouping in the world of manufacturers who are brought into direct relation to world lines of rail and ocean traffic.

It is scarcely more than a quarter of a century ago that the site of Bush Terminal was a vacant waste. Its development since that

SITE OF BUSH TERMINAL, SOUTH BROOKLYN

As it looked at the beginning of building operations

period is an epic in American industry and shipping. First ground was broken on Bush Terminal in 1895. Mr. Irving T. Bush, then a young man scarcely beyond his majority and joint inheritor of a considerable fortune, cherished an ideal of what a modern terminal should be. He had a vision of a complete terminal plant upon those vacant acres. He clearly foresaw the ever-increasing congestion that was bound to develop at the piers of lower Manhattan. He was confident that increased facilities to care for the traffic of the port would be demanded with the growth of the nation and of the vast community centering in New York. But there were many who regarded Mr. Bush's plans as visionary. The proposed site seemed too far away. It was suggested that he might as well have planned a terminal at Coney Island.

Though confronted by disheartening and seemingly impassable obstacles, the young man set about courageously to break through the wall of indifference and ignorance that stood before his goal. He was years ahead of his time for, although planned a quarter of a century ago, the fundamental arrangement of Bush Terminal, the geographical relation of piers, warehouses, terminal railway, and industrial buildings is a standard the world over. Moreover, Bush Terminal has been an instrument to aid in elevating the reputation of port development work. During the inception of Bush Terminal some of the greatest ports in the world suffered under a stigma of physical delapidation and moral degradation that lowered the standard of sea-faring men in the estimation of the public. Shiftless ports with their open vices might make good copy for romantic writers, but they slandered the dignity of those who followed the sea and made for the slow and costly handling of cargoes.

Two incidents will serve to illustrate the nature of the obstacles overcome by Mr. Bush in his pioneer work for the Terminal. Then we will consider in detail some outstanding features of the great plants which covers about two hundred acres.

Mr. Bush's first great disillusionment came when he had completed his first pier. Shipping facilities in lower Manhattan were badly crippled even at that time, and it had seemed that facilities for loading, unloading, and storage in a cheap location would inevitably attract patronage. But shipping men thought the pier too far away. When Mr. Bush found the pier was likely to remain empty, he chartered a ship, which he christened "The Independent," loaded her with bananas from Jamaica, and brought her back to his pier. But there was no way of distributing the bananas in Brooklyn; fruit dealers were unwilling to handle them at that point, and so Mr. Bush auctioned the ship load at a New York pier. After a

second and third trip to the West Indies, a line which had a monopoly on the Jamaica trade, perhaps fearing competition in fruit transport from Mr. Bush, said that they would be glad to help him make a demonstration of the value of his pier by landing nonperishable materials there. The only proviso was that Mr. Bush should make no charge for docking and handling the goods, which they agreed to land. Mr. Bush accepted the challenge and soon the pier was drawing business.

A second disappointment came in the failure of many of the railroads to recognize Bush Terminal. Few of them, apparently, knew that it was on the map. In long wearying rounds, Mr. Bush visited the offices of all the freight agents. "When I was turned down, I considered that an invitation to begin negotiations had been extended," the writer once heard him say.

Some of the Western railroads had never even listed Bush Terminal. It was not in their rate books. Mr. Bush sent wise young men to Michigan with instructions to buy several carloads of hay and consign them to Bush Terminal. The freight agent in Michigan scratched his head and said he did not know where Bush Terminal was, but he agreed to ship the hay, and when cars bearing in six foot letters "Bush Terminal, Brooklyn," made their way through Eastern yards, railway men sat up and took notice. Bush Terminal was on the map.

The incredulity which Mr. Bush encountered among both sea and rail shippers, he also encountered among capitalists. They said he was a dreamer. That may be true; most men of vast accomplishments are dreamers, but Mr. Bush's vision has been realized. An illustration of the capacity of the plant he inspired may be had from the fact that during the war the port of New York was allotted eighty per cent of the outgoing U. S. Army freight and Bush Terminal was allotted sixty per cent of that eighty. There was no time at which freight, munitions, or troops were delayed by failure in handling at Bush Terminal.

The Bush Terminal Company was incorporated in 1902. The last of its eight piers to have been completed was pier No. 6, completed July 1st, 1913. Six of the piers are 150 feet wide and 1,300 feet long; one is slightly less and one somewhat larger. The largest pier, double-decked, has an area of fifteen acres on both floors. The piers accommodate twenty-seven steamship lines. There are 122 warehouses immediately opposite and facing the piers, and with 29½ million cubic feet of storage space. There are sixteen model loft buildings for the accommodation of manufacturing and industrial tenants, and with more than five and one million square feet of

space. Two of these buildings, numbers 22 and 24, have been completed within the last three years. There is a cold storage plant with one and one-half million feet of space. A million dollar fire protection system assures lowest insurance rates. Bush Terminal railroad, with more than twenty-three miles of track and modern equipment is a terminal for the ten main trunk lines reaching the port of New York.

The loft buildings are occupied by the plants of almost three hundred industrial concerns. The company furnishes the manufacturers light, power, storage, drayage, porterage and numerous other facilities at an extremely low co-operative rate. The manufacturer may purchase as much or as little of these services as he desires.

The warehouses include both one-story warehouses with a clearance overhead of twenty feet, and the multiple story warehouses which are four, five and six stories high. The one story warehouses are adapted for the storage of cotton hemp, jute, sisal, etc. The multiple story warehouses are adapted to the storing of coffee, cocoa, rubber, wood, burlap, etc. There are six six-story coffee warehouses.

Bush Terminal is an agency for the accommodation and development of both traffic and industry. Its traffic activities consist of those of forwarding agent. It receives goods for export from the interior shipper, separates and classifies them, puts them in a warehouse free of storage for one month, marks them, packs them, and ships them to their destination, promptly. Goods are packed, invoiced and shipped at an extremely low rate, a few cents a hundred pounds.

One of the features of the plant is the provision that has been made for the accommodation and welfare of employees. There is an attractive two-story building designated as the Longshoremen's Club. This is equipped with a restaurant and lounging rooms for stevedores and dock laborers. This makes it possible for the men to obtain without inconvenience properly cooked wholesome food at a reasonable price. It also provides a place for them to go during spare time when the weather is inclement. An emergency hospital is maintained by the Company for its employees and those of its tenants.

Two other institutions also care for the employees, branches of the Y. W. C. A. and the Y. M. C. A. The Y. M. C. A. provides social, athletic and recreational features. The building has bowling alleys, billiard tables, a large gymnasium with full equipment, reading rooms and lounging rooms

BUSH TERMINAL AS IT IS TODAY

Covering 200 acres, showing piers, warehouses, loft buildings for industrial concerns and railroad yards

THE STATEN ISLAND SHIPBUILDING COMPANY

BACK in 1895 a small group of men who had spent the greater part of their lives following the sea, decided that the Port of New York needed a steel shipyard. Their experience had taught them that a steel shipyard located in the port, could not help but be successful because of the great demand of harbor craft to supplement the call for larger tonnage, which call became, as everyone knows, a paramount demand during the hectic years from 1915-1920. That their venture was successful, the present plants of the Staten Island Shipbuilding Company stand ready to testify. The man who pioneered this enterprise was W. J. Davidson, who is still a most active president of this company. Associated with him at the start were a few of the leading men of the old Starin yard of whom Messrs. Clute, Carney and Hinton were the leaders. Of these associates the latter two—Carney and Hinton—have recently died, while James Clute is at present one of the owners of the Company.

The first plant was located in a part of the present Port Richmond Yard and consisted principally of a small machine shop and boiler shop. Mr. Davidson had been for many years master mechanic of the Starin Yard, and with the assistance of Mr. Carney looked after the mechanical end of the business. Mr. Clute had been chief boilermaker at the Starin Yard and occupied that position with his new Company.

The small office served as a drawing-room and large layouts were made on the office floor. Such was the start of this remarkable Company. "Service" and "Quality" were the two words most prominent in the minds of these pioneers and in time it became a by-word that if one wanted a good job done in the right way he could do no better than by letting Mr. Davidson do it.

At Port Richmond adjoining the Davidson plant was the old Burlee Dry Dock. It was more or less a rival firm and had its customers who had long known Mr. Burlee. Mr. Davidson early saw the benefits of an amalgamation of resources and the result was that in 1898 the two plants consolidated and formed the Burlee Dry Dock Company.

In 1898 George H. Bates, just graduated from Stevens Institute, walked into the Port Richmond office and, finding Mr. Davidson in his shirt sleeves studying a layout on the office floor, persuaded him that he needed a draftsman. He was made chief draftsman, and in a short time began designing engines, the manufacture of which has become one of the principal features of the work of this Company.

At about the same time, with the advent of orders for steel hulls, it became necessary to secure the best hull man obtainable to supervise this all-important work. The old guard heretofore mentioned were all engineers and the building of steel hulls necessitated a different kind of experience than any of them had had. Mr. J. E. Bowers was brought up from the Delaware to fill this post, and so the organization was rounded out.

The baby Company soon began turning out work in quantity and in quality to the complete satisfaction of all. The early hulls built included such a diversified line as carfloats, scows, barges—both coal and oil—yachts, schooners, ferry-boats, steam and derrick lighters, seagoing and harbor tugs, dredges, drill boats, and in the more recent years the product has included mine sweepers, cargo ships, and huge oil and molasses tankers. It is doubtful whether any yard in the Country can show a list of ships that includes more types than have been built by this Company. The fact that the yard is located in New York Harbor has been largely responsible for this because nowhere else in the world can one find such a variety of craft as have business in this port. The upkeep and replacement of these craft insures the permanency of this yard which surely speaks well for the vision of its founders.

Shortly after this Mr. Burlee withdrew from the firm and its name was changed to the Staten Island Shipbuilding Co.

As the Company began turning out these craft and the work became heavier, it was apparent that it must enlarge its plant. J. H. Davidson, son of the president, who heretofore had been gaining valuable experience at sea, entered the Company and proceeded to take an active part in its administration. The old Port Richmond Plant was enlarged to its present size, additional dry-docks were built and shortly after, the site of the Mariners Harbor yard was acquired. It became the duty of the younger Davidson to develop the upper or Mariners' Harbor Yard, and, in a few years this plant was beginning to turn out its share of the work. Thus the Company maintained a healthy growth until the year 1915 when shipyards first began to feel the demands for work occasioned by the trouble in Europe.

The war record of the Staten Island Shipbuilding Company is indeed an impressive one. We cannot take the space to detail all of this work but let us touch the high spots. Its production from 1915 to 1919 included six 3,500-D. W. T. cargo ships built originally for the Cunard Line and commandeered by the government; eight mine sweepers for the U. S. Navy, which have performed wonderful service since their delivery and are now being converted into

wrecking and salvage tugs; six seagoing tugs for the U. S. Navy; twenty-four reciprocating engines and condensers for the French Government; conversion of a large number of yachts, merchant vessels and ex-German ships to craft suitable for war purposes and the remarkable part of this is, while it was all transpiring, the shipyard had to be built. The Mariners Harbor Plant at the outbreak of the war had only two small ways and no buildings or shops to amount to anything. Thus, the entire plant had to be built and its present size and the permanency of its buildings and ways will attest to the amount of work thus entailed. Practically all of the ground had to be filled in and great quantities of piling driven and much dredging in the channel and approaches to the Plant.

Since the War the Company maintained its growth with an ever-increasing volume of work until the Spring of this year, 1921, when it, in common with other industrial plants, felt the slump of business. A large number of oil barges have been built, an 1800-D. W. T., a 4000-D. W. T., and a 6300-D. W. T. tanker have been built and a dredge for the U. S. Army. At present the plant is building a large seagoing tug and the new municipal ferryboat which bears the name of "President Roosevelt," and if quality of workmanship can do it, it will be a vesesl worthy to bear such a name.

A recent addition to the Mariners' Harbor Plant is the new 10,000-ton floating drydock which was put in commission early in July, 1921, and has scarcely been idle a day since. This new dock rounds out the facilities of the plant for handling work of the biggest character. Its reputation for small work has long been established, but the demands occasioned by the war made it imperative to do big work, and once it got fairly started in the game, the Company did not intend to forsake it. Therefore, with its boiler, machine, plate and angle, and joiner shops, its mold loft, foundry, new concrete shipways and six dry docks, ranging from 150 ft. to 475 ft., in length, and its excellent berthing facilities it stands at present competing with its rivals in all grades of work.

Such is the history of the pioneer steel yard of the Port of New York. Among the many examples of its workmanship which may be seen today are the old ferryboat "Richmond" built in 1904 and still considered the pride of the line; the yacht "Undaunted," formerly the "Karina"—the largest schooner yacht in the world; the tug "Gypsum King"—one of the largest seagoing tugs on the coast built in 1902; while one of the last products, the "Franklin" of the Galena Signal Oil Company, has proven the ideal tanker to transport various grades of lubricating oil in bulk without mixing the grades.

The old "Clairmont" of the Hudson-Fulton Exposition fame was built by this Company. The yachts "Resolute" and "Shamrock V" received their final overhauling at the Port Richmond Yard before their races in July, 1920. While at present a most unique job is nearing completion, in the lengthening of the old tanker "Northwestern" by building 56 additional feet in her middle body, giving her 1,000 additional tons "carrying" capacity and at the same time thoroughly repairing and reconditioning this vessel, which was given up for lost two years ago. This work is being performed right under the personal supervision of Mr. Davidson—the lengthening taking place on the large single section floating dock at the Port Richmond plant.

Thus after twenty-seven years of continuous existence, the Staten Island Shipbuilding Company stands today ready and capable to tackle any character of marine work. For the convenience of its customers it opened an office at No. 1 Broadway, New York, in 1920, the younger Mr. Davidson assuming charge of it. Through this office the Company is able to keep in close touch with the various ship companies.

THE KERR STEAMSHIP COMPANY

THE KERR STEAMSHIP COMPANY is a succession of the firm of Kerr & Atkinson which sprung into being during the early days of the world war. When expansion made it necessary to incorporate the business the present organization was formed. Those chiefly responsible for financing and building up the vast amount of war business that the company enjoyed were: Edward F. Geer, who raised the funds; Henry S. Quick, who procured immense quantities of freight; and A. E. Clegg, who directed the office affairs of the company, H. F. Kerr, a British subject, acting in conjunction with Mr. Clegg.

The earnings of this company were large during the period of the war. The company erected a twelve-story building on Beaver Street, where, for a considerable time after the war, it handled a fair share of the freight business from the Port of New York. Plans have been developing for over a year to institute passenger services to Europe.

COMPAGNIE GENERALE TRANSATLANTIQUE
(*The French Line*)

FOUNDED in 1855, as the Compagnie Generale Maritime, the French Line began business with sailing craft to the Newfoundland fisheries and in the guano trade to the Pacific and with steamers from France to Algiers and other ports to the southward. Six years later the company assumed its present name of Compagnie Generale Transatlantique and made a contract with the French Government to put in operation a line of mail steamers between France and the West Indies, Mexico and the United States.

The Havre-New York service was begun with iron sidewheelers of 3200 tons and was inaugurated with the sailing of the Washington on June 15, 1864. She was commanded by Captain Duchesne and arrived in New York on the night of June 28th.

The Lafayette followed her on the line later in the year, leaving Havre on August 24th and reaching New York on September 5th.

These two pioneers were followed by the iron sidewheelers Imperatrice Eugenie, Europe and Napoleon III.

The Pereire, Ville de Paris and St. Laurent were single screw vessels and were fast craft for their day. Their success led the company to abandon sidewheelers and build screw steamers so a fleet of fine single screw ships came into being. They were named France, Amerique, Labrador and Canada. La Normandie was added to the line in 1883 and marked a distinct advance in size, speed and comfort.

In those days, the greater part of the world's mercantile tonnage was built in the shipyards of Great Britain, French yards being mainly devoted to the construction of men-of-war. The Compagnie Generale Transatlantique, however, with characteristic progressiveness, decided to establish its own shipyard and build its own liners, and thereafter only two, La Gascogne and La Bourgogne, were built in the United Kingdom, the others of their new fleet, La Champagne and La Bretagne, being constructed at the company's own works at St. Nazaire. These ships were large craft for their day, being 495 feet long, 52 feet beam, 33 feet 6 inches deep and 6,900 tons. Their engines were three-crank, six-cylinder compound, each high pressure cylinder being over its low pressure cylinder, so that there were really three tandem compound engines on the same three throw crank shaft.

For many years these five ships were favorites with the traveling public. But naval architecture progresses constantly, and last year's cracks drop astern as new ships come out. In a few years

S. S. PARIS OF THE FRENCH LINE

The above photograph was taken on her arrival in New York on her maiden voyage June 22, 1921

these favorite vessels were being outbuilt. The Company thereupon brought out their first twin screw ship, La Touraine. She was built at St. Nazaire in 1891 and is still in service.

In 1899, the Normannia, built for the Hamburg-American Line, was bought from the Spanish Government which had purchased her just before the war for use as a transport and auxiliary cruiser. She was renamed L'Auitaine and put on the New York run. She was followed by two new ships, La Lorraine and La Savoie.

Increasing traffic required newer and larger vessels, and the French Line, keeping pace with the demands of travelers, in 1906 added another fine ship, La Provence. She was a twin screw ship of 18,000 tons and her engines developed 22,000 horse power. She went into service in the spring of 1906, leaving Havre the morning of April 21st. She arrived in New York on the morning of April 27th.

Continuing its building programme, the company constructed the Rochambeau in 1911. She is 569 feet long, 64 feet beam, 43 feet deep, 13,391 tons register and 17,417 tons displacement on 26 feet 10 inches draught. Her engines indicate 13,000 horse power and are a combination of reciprocating engines and low pressure turbines. She is a one-class cabin steamer and is one of the best of that type afloat.

Other one-class cabin steamers are the Chicago, built in 1908, the Niagara, built in the same year and originally used for long cruises, and the older La Touraine.

The next year, 1912, the company placed in service the large quadruple screw steamer France. Though eclipsed by the Paris, the latest addition to the fleet, she was then the finest steamship ever built in a French shipyard. On her maiden voyage she left Havre April 20, 1912, at 2 p. m. and arrived in New York at 8 a. m. on April 26, making the voyage in 5 days 20 hours and 2 minutes.

But the finest ship of the fleet is the latest addition, the Paris. She is 768 feet long, 86 feet beam and 60 feet deep. On 31 feet draught she displaces 36,700 metric tons. Construction was begun before the war, but suspended in 1916 and not resumed until after the armistice.

Great attention has been paid to the safety of the ship, and she is divided into 15 watertight compartments. Forward and aft the bulkheads extend up to D deck and amidships to E deck. Her 15 oil burning boilers are in five compartments with longitudinal bulkheads outboard and these bulkheads extend aft through the engine room. Powerful pumps are provided to take care of any incoming

water and, should the vessel take a list from damage to a side compartment, water ballast can quickly be pumped to the high side to put her again on an even keel.

The Paris has accommodations for 3,240 passengers divided as follows: In the staterooms and suites de luxe, 104; in the first cabin, 418; in the so-called "mixed" class, 50; in the second cabin, 464; in the third class, 2,200, of whom 1,092 are in staterooms and the rest in bunks. The ship's complement is 664, so that there is a total of 3,904 persons aboard when she is full. Forty-nine 30-foot boats of two different types are installed, as well as a powerful 30-foot motor launch equipped with radio. In addition, there are 8 rafts of special type and a whaleboat and a dinghy.

A powerful radio system keeps the Paris in constant communication with the shore and with other ships, while her submarine signal apparatus makes navigation in fog an easy matter.

Altogether, the Paris is a notable ship and a credit to her designers, owners and builders.

The company maintains services between France and New York, Baltimore, Philadelphia, Cuba, Mexico, New Orleans, Panama, Guiana, Haiti, Porto Rico and other West Indian ports; Hamburg, Antwerp, Cardiff, London and Liverpool; Casa Blanca, Algiers, Tunis, Oran, Bone, Phillippeville, Bizerte, Mazagan, Saffi; Mogrador, Tangier, Sfax, Cette, Bougie, Montaganem; Christobal, Guayaquil, Callao, Mollendo, Arica, Iquique Antofagasta, Valparaiso and Talcahuano.

The New York offices of the company are at 19 State street.

THE NEW PORT OF NEWARK

THE natural and developed facilities of the new Port of Newark were so apparent to the officials of the Submarine Boat Corporation that it was without hesitation that this site was selected for the building of its big plant for the production of standardized ships. During the emergency period at Newark Bay shipyard, these advantages were further emphasized and led to the incorporation of two component companies—the Transmarine Corporation and the Atlantic Port Railway.

What makes Port Newark so important in its relationship to the Port of New York is its direct connections with the principal transcontinental railroads which have their termini on the west bank of the Hudson. This is the keystone of Port Newark's argument for recognition as an auxiliary port. By the coordination of rail and ship, lighterage is eliminated and one of the principal causes for the congestion in New York Harbor is greatly alleviated.

A shallow channel interfered with the loading of vessels to more than a twenty foot draft, but the energetic city of Newark at its own expense, has just completed dredging the channel to a minimum depth of 31 feet with a uniform width at the bottom of 200 feet. At an early date it is expected that this channel under governmental auspices will be widened to 700 feet from the Kill von Kill to the entrance of the Passaic and Hackensack Rivers, and possibly up these streams to the industrial developments farther inland. Geographically, Newark Bay is the western reserve of New York Harbor, and regardless of state lines, it is an integral part of the great eastern Gateway through which more than 50% of the nation's export commerce flows. Unlike the lower stratum about the island of Manhattan, Newark Bay and its contiguous shore lines present no engineering enigmas. The bay bottom and the shore lines are of a soft, silty nature, and the use of suction dredges is, indeed, a simpler method of getting deeper water than dynamite.

Port Newark Terminal offers to shippers a service which may be summarized as follows:

First: It offers through the Transmarine Corporation an ocean steamship service, which has a fleet of thirty-two new steel steamers available.

Second: Through the Canal division of the Transmarine Corporation, it offers a responsible and regular service over the New York State Barge Canal to Buffalo and the Lake Ports, including Chicago, Cleveland, Detroit, Duluth and Superior. Store door deliveries are made at Buffalo and a private terminal with Barge connections are offered to shippers desiring storage service at this point.

Third: Port Newark Terminal has been connected directly with the Pennsylvania, the Lehigh Valley and the Jersey Central Railroads through the Atlantic Port Railway. Through rates also apply on all other trunk lines for Atlantic Port Railway delivery when routed over the tracks of the first three mentioned.

Fourth: The tracks of the Atlantic Port Railway serve two large, fire-proof, modern warehouses, which are located close to the loading dock of the Transmarine Line. The tracks also serve the storage yard and dock. The storage yard consists of over 100 acres.

Fifth: The loading dock is over 4,000 feet long, double track below, with a trestle above, which is equipped with thirty steam and electric cranes. Parcels weighing up to seventy tons can be lifted and effectively handled.

Sixth: Besides its fleet of thirty-two steamers and twenty barges, the Transmarine Corporation has a corps of forty large motor trucks to utilize in the delivery and collection of package freight in the Metropolitan district.

It is the completeness of the Transmarine service at Port Newark Terminal that qualifies this location as an ideal storage base and distribution center. With its equipment, it presents a unique appeal to manufacturers of staples in food and supplies, to canners, to piano and automobile makers, large publishing houses for the storage of paper, and to manufacturers of all classes of machinery and steel implements. It is an ideal operating base in all its appointments to the western factory owner, equipped for storage and deliveries to a far greater degree, than if the manufacturer owned an individual eastern agency and warehouse.

Port Newark is quite accessible to New Yorkers, particularly those travelling by automobile. Upon arrival at Jersey City via ferry, the following route is the most direct: Montgomery Street, Hudson County Boulevard, Lincoln Highway (also known as Plank Road), Doremus Avenue and Port Street to Port Newark Terminal.

New Yorkers can also come to Port Newark via the Hudson and Manhattan Tubes to Park Place, Newark. Upon arrival take jitney marked "Port Newark" during rush hours or any southbound trolley on Broad Street to Market Street, then transfer to South Orange car marked "Wilson Avenue" to Avenue L, then Bergen car to Port Newark.

A well-paved highway connects Port Newark with Newark proper, affording a comfortable, rapid service by automobile or jitney. This road, known as Port Street, connects with South Street. There is regular all-day trolley service via the Bergen Line, which co-ordinates with the South Orange Line at Wilson Avenue and Magazine Street.

LEWIS NIXON

Designer of many famous battleships and builder of the steam pilot boat, Sandy Hook

LEWIS NIXON

IN KNOWLEDGE of the harbor of New York and its approaches even the pilots must admit a peer in Lewis Nixon. In 1897 Mr. Nixon built and commissioned the Loudoun, upon which he lived with his family for five months of the year from 1897 to 1916. Anchored in the upper or lower bay, in the Hudson or the Sound, he steamed every morning to his shipyard on the Kills; in bad weather seeking shelter in Northeast Harbor, Bay Ridge or Gravesend Bay.

The Loudoun was nearly always being used to entertain distinguished guests from home and abroad. Political leaders like Croker, yachtsmen like Lipton, diplomats like Lord Pauncefote, traders like Gates, generals like Barry, admirals like Sampson, Senators, Governors, Congressmen and men of leading rank in commerce, finance and politics enjoyed the hospitality of the Loudoun; and Mr. Nixon learned of the harbor, its charm and its possibilities, as no one could other than a pilot. He studied its future and, as early as 1895, was urging legislation for its development both as regards channels and docks.

Mr. Nixon put forth plans, as early as 1896, for building docks from St. George to the Narrows along the Staten Island waterfront and also for the development of a great, new port by means of a breakwater half a mile off the Staten Island shore below the Narrows, utilizing the great natural level train parks extending back from South and Midland beaches, the tracks to pass below the high grounds of the island's center and across the Arthur Kills by bridge to the continent, so saving congestion of the Metropolitan District and useless and expensive handling of goods intended for the rest of the country.

Lewis Nixon, then actively engaged in his profession as naval architect, aided in the designs and superintended the construction of the passenger steamships "St. Louis" and "St. Paul," vessels which have been in continued service for over a quarter of a century and which, during their time, were the fastest transatlantic liners afloat and which have sent to the scrap heap their foreign rivals of same or even later time of birth.

Probably the greatest public achievement of Lewis Nixon was his designing the famous battleship "Oregon" and other battleships of the Oregon class. The "Oregon's" performance, when she circled the Western Continent and in record time arrived in Cuban waters in time to take part in the bombardment of Cervera's fleet—although the "Oregon" was, even then, an "old" vessel—is too well known to need repetition here. It is timely, however, to draw attention to the efforts, that proved almost futile, to sink the battleship

"Indiana," recently, by means of aerial bombs and shots from modern battleships, the "Indiana" having finally been declared obsolete. That the ships of the Indiana class resisted all efforts to sink them promptly, under accurate fire of heavy guns, is a testimonial in itself to the genius of Lewis Nixon, who was their designer.

The Russian warship that sank an enemy's ship in the Russo-Japanese War, was designed and built by Lewis Nixon. He built the first seven submarines of the American Navy, the first motor boat to cross the ocean and the first gas-engine propelled submarine destroyers and he originated the first depth-bomb, in 1895.

Mr. Nixon has built sailing boats, side-wheel boats and screw-propeller boats—from one screw to six—vessels of war and of peace of every type, from the most graceful of pleasure yachts to great battleships.

He founded the International Smokeless Powder Company and the Standard Motor Company, both on the waters of New York Bay.

Lewis Nixon has spoken from New York to California and from Portland to Buenos Aires in favor of the upbuilding of our merchant marine on sound lines, insuring gainful occupation and always advocating the best food, quarters and treatment for United States seamen.

Of Lewis Nixon's metal, a story that has appeal, trenches on government service back to the time when official Washington was worrying over burdens taken on in administration of San Domingo customs supervision. Foreign creditors were making it plain that they cared more for interest payments than excuses, reciting how smuggling genius was dodging tax-collecting custom houses. It was determined forthwith to police the coast.

"We must have four revenue cutters right away," it was decided by uniformed commanders, sitting at the department desks. But naval constructors with prompt unanimity parried the calls. Not one could be found who would agree to meet specified demands—the conspicuous specification item being that there should be delivery of all the boats simultaneously, and within ninety days. Lewis Nixon (constructor of the famous White Fleet)—the man of whom William C. Whitney has said: "There is only one reason why he ought not to be the Navy's head—within a year he would work the whole outfit to death, admirals, seamen and all"—this same Lewis Nixon was mentioned by somebody as a likely helper out of the dilemma.

"Telephone his office," commanded the official order-giver.

"That means that we've got to find his hat," was cynicalism's answer.

But Washington found Nixon.

"You want four boats built—and want them all in three months. All right, you can have them." As to cost, there was no limit laid. "But let us be definite," insisted Mr. Nixon. "Let everything be agreed upon before we start." He summoned members of his old staff of the Crescent Shipyards. Figuring took days. "The price will be so much," Mr. Nixon communicated to Washington, and then he went over to Perth Amboy and hired a plant he knew about to go ahead—discovering as he started that basic sections of machinery had just been removed. Incidents like that only expedited. And a corner that developed in shipbuilding materials was no more a discourager.

Four new revenue cutters were in the water and on the way to smuggler curing before the ninety days were over, although Mr. Nixon cheerfully stood a loss of $50,000 on the contract. But he had given his word and Mr. Nixon's word means everything the four letters imply.

The foregoing anecdote was written for a New York newspaper last year by a commentator who knew Lewis Nixon well and he ended his tribute to the great American naval architect by saying:

"In the recent years he (Nixon) has had intimacy with the construction side of government work, has performed a lot of unexploited service, has been called often to make business sacrifice to help out pretentious officialdom; has been drafted into self-abnegation a whole lot, which nobody is ever likely to hear him murmur over. Murmuring is not the Nixon way. His habit is to take fortune as fortune comes along, a medal to be accepted or a fight to be fought *sans* any sort of shamming."

One of the last acts of Lewis Nixon as an official in the Cramp yard, where he superintended the construction of the battleships he himself had designed as a United States Naval Constructor, was his trip on the trial of the battleship "Indiana," off the Delaware Capes, in March, 1894, as chief constructor of the Cramps. Two years later he was present during the trials of the "Massachusetts," also a child of his brain, both of which great battleships were given over as targets for United States naval gunners and bombers.

The New York *Herald*, on May 6, 1920, referred to Mr. Nixon in these appreciative words:

"On the day of the announcement that Governor Smith had selected Lewis Nixon to be Public Service Commissioner, the Navy Department announced that the famous old battleship "Oregon" had become antiquated and would be placed out of commission.

"The ship which Mr. Nixon designed has finished her course and, however secure is her place in history, she is, in fact, little more than a memory.

"It is interesting to take note, however, that the man, still in middle life, at the same time embarks on new and highly important duties!

"There is something in the synchronism of these two events—the passing of the old ship and the entrance of her designer, while at the height of his strength, upon new duties—which might cause bewilderment to some of the old philosophers who were wont to bemoan the brevity of human life, as compared with the endurance of inanimate things."

Educated as a sailor, Lewis Nixon has given his life and energy to such measures as would carry our flag afloat on men-of-war and merchant vessels to all the seven seas under conditions insuring respect, both as concerns the might and majesty of our government and as to service for the world's welfare.

DANIEL COY CHASE

A MAN of long and valuable experience in shipping and harbor activities, and who has filled many important positions in railway service in business life, and in the public affairs of his state and city, is Captain Daniel Coy Chase, of South Amboy, New Jersey.

Captain Chase was appointed by Governor Robert S. Green, in 1889, a member of the Board of Commissioners of Pilotage of New Jersey, and in 1894 he was elected president of that board, which position he continued to fill until his retirement in April, 1906. Throughout the period of seventeen years Captain Chase manifested a very active interest in the welfare of the Board of Pilot Commissioners as well as that of the Pilots' Association.

ATLANTIC MUTUAL INSURANCE COMPANY

THIS Company, whose business is that of Marine and Inland Transportation Insurance, is the oldest organization for this class of insurance chartered by the State of New York. It was chartered in the year 1842 to succeed a stock company by the name of the Atlantic Insurance Company engaged in the same line of business.

Formerly located at the corner of Wall Street and Hanover Place in the old Merchants Exchange Building, the Company purchased in the year 1851 the property at the corner of Wall and William Streets, on which was constructed a building for its occupancy. Subsequent additional purchases to adjoining property were made. In the year 1900 the former building was removed and the present structure, bounded by Wall Street, William Street and Exchange Place, with entrances on each of the streets indicated, was erected for the use of the Company. It will thus be seen that the Company has since its organization been in the immediate neighborhood, and for the past seventy years on its present site, 51 Wall Street.

Actuated by motives of justice and liberality in construing its policy obligations, the Company's business has been extensive, and its aid to the commerce of the country of a most important character. Since its organization it has granted insurances in excess of $34,000,000, producing premiums of $335,000,000, and has paid losses of $165,000,000.

Being a Mutual Company, the profits of the business are divided annually amongst the policy holders in the form of Scrip Dividends. Until redeemed the Scrip bears interest, and from the earliest date the rate of interest has been 6% per annum. The Scrip at present unredeemed is that issued in the years 1920 and 1921.

The Company has as its object the promotion of commercial interests rather than gain in trade, and the business community is fortunate in having included in its insurance facilities a Company of the high standing and financial strength of the "old Atlantic," as it is affectionately designated.

THE UNITED FRUIT COMPANY'S GREAT WHITE FLEET

IT IS a far cry from 1866 to 1921 and the years between have seen the world advance in every line of human endeavor, not the least of which is shipping. According to available records ships first brought bananas from the West Indies into the port of New York commercially in the year 1866. But the vessels engaged in the trade in those days were far different from the fine refrigerator passenger and freight steamers which comprise the United Fruit Company's modern "Great White Fleet" and which today are such important factors in our marine and commercial activities.

Incorporated in 1899 and having its inception in the Boston Fruit Company founded in 1885 by Andrew W. Preston, the marine history of the United Fruit Company illustrates typically the world's progress in steamship construction and operation. In 1899 the company's owned tonnage was 5,000. Today the United Fruit Company's fleet is composed of thirty-three owned ships with an aggregate tonnage of 140,000 which, combined with the fleet of its English subsidiary, Elders & Fyffes, Ltd., consisting of sixteen owned ships with a total tonnage of 84,700, makes a grand total of forty-nine owned ships with an aggregate tonnage of approximately 225,000.

In addition to its owned fleet the Company ordinarily operates about twenty chartered vessels.

The distinctive name "Great White Fleet" has become a household word with the traveling public of America and the sign manual of dispatch and service among shippers. Of the thirty-three steamships owned by the company, nineteen are refrigerator banana cargo ships with passenger accommodations, eight are refrigerator banana cargo ships, one is a non-refrigerator banana cargo ship, one is an oil tanker and four are sugar cargo vessels. One new refrigerator banana cargo ship with electric drive is in service and four new refrigerator banana cargo and passenger ships are being built for its English fleet, bringing the latter fleet up to a total of nineteen steamships, of which six are refrigerator banana cargo ships with passenger accommodations and the balance refrigerator banana cargo ships. Usually the Company operates about ninety steamships in connection with its business (including its chartered steamers and English fleet).

Most of the ships of the "Great White Fleet" today fly the American flag and during the past ten years it has had the distinction of carrying 560,000 passengers and moving 13,960,000 tons of freight.

S. S. PASTORES

One of the latest additions to the Great White Fleet of the United Fruit Company

The ships of the "Great White Fleet" are built particularly for services in tropical waters, the comfort and safety of passengers being especially provided for. The passenger accommodations are unexcelled; the staterooms are large and spacious and many have private baths; the cuisine is equal to that of the best hotels. These steamships furnish regular passenger, mail and freight service between the Atlantic ports of the United States and Cuba, Jamaica and the Atlantic ports of Central America and Colombia and through the connecting lines at the Panama Canal with the west coast ports of South America. In other words the "Great White Fleet" directly serves nine countries of the Western Hemisphere and is a prime factor in the commerce of twenty-three nations of that hemisphere.

Each week sees at least four ships flying the United Fruit Company's house flag arrive at or depart from the Port of New York, and frequently the number is greater. In addition to its service from New York the company maintains passenger and freight services from Boston and New Orleans and freight service from Philadelphia, Baltimore and Mobile. Thus in twenty years the Carribean region has been brought so closely in touch with the United States, and local communication has been so vastly improved, that today it offers few perplexities to the traveler or shipper.

All ships of the "Great White Fleet" are equipped with the most modern and up-to-date means of radio communication and the Company has established a chain of high-powered radio stations in Colombia, Costa Rica, Honduras, Nicaragua, Panama and Swan Island, with a United States terminal located at New Orleans and smaller stations at Boston, Massachusetts, and Burrwood, Louisiana. As a consequence its ships are constantly in touch with each other and with the shore, a most important factor in any marine organization.

Forty-two United Fruit Company ships (including the larger part of its English fleet) were engaged in the service of the United States and the Allies carrying troops and supplies during the Great War. Of this number thirteen were lost and have since been replaced by newer and larger ships.

NORTON, LILLY & COMPANY

THE earliest records in the possession of this firm show transactions made in the year 1841 by John Norton, the founder of the business.

After carrying on a ship brokerage business for many years, about 1857 a line of sailing packets to River Plate ports was established, known as The Norton Line to South America.

Later, about 1870, the firm established a line of sailers to South African ports, known as The Norton Line to South Africa.

In 1893 steamers took the place of sailing vessels in both of these trades, and the lines carried on under the names of: The Norton Line of Steamers, and The American & African S. S. Line.

Within the next few years, the firm established themselves in trades all over the world, founding, in addition to the lines already established, the American & Indian Line, American & Australian Line, American & Manchurian Line and American Levant Line.

The members of the present firm are: Skeffington S. Norton, Joseph T. Lilly, John B. O'Reilly, John J. Farrell, Edward J. Brandreth, and William J. Edwards. The firm acts as general agents for the following steamship Lines:

Norton Line
Panama-Far East Line
American & Indian Line
American & African Line
Isthmian Steamship Lines
American & Australian Line
American & Manchurian Line
Atlantic-Gulf Far East Line
Ellerman & Bucknall S. S. Co. Ltd.
American-Mediterranean-Levant Line
Societe Generale de Transports, Maritimes a Vapeur

Their main office is at 26 Beaver Street, New York City, with branch offices in Philadelphia, Baltimore, Norfolk, Newport News, New Orleans, Chicago, San Diego, Los Angeles, San Francisco, Portland and Seattle.

BENJAMIN MOORE & CO.

THE present business of Benjamin Moore & Co. was originally started by Moore & Morrissey, ship chandlers, in 1774, at the location where Pine and Pearl Streets are now, but which in those days was on the immediate water front. The concern continued as above without change until the year 1812, when Mr. Morrissey died, and the firm reorganized as Benjamin Moore & Co.

The firm's business is now under the direction of Charles H. Umland, as president; John Seikel, secretary, and Charles H. Umland, Jr., treasurer, and numbers among its customers many of the old-time concerns, for whom they have made sails, etc., for over fifty years.

EXPANSION OF AMERICAN CABLES

CO-INCIDENT with the growth of the purely maritime interests of the port of New York have been other interests which have developed quite as rapidly and without which the port could never have reached the commanding position it now occupies. Of these, the cable companies whose lines reach out to all corners of the earth and act as what might well be termed the nerve system of Foreign Commerce, are important factors.

Patiently and persistently the different companies are ever working to extend cable service to every trade port in the four corners of the globe. Each year records the opening of many new offices.

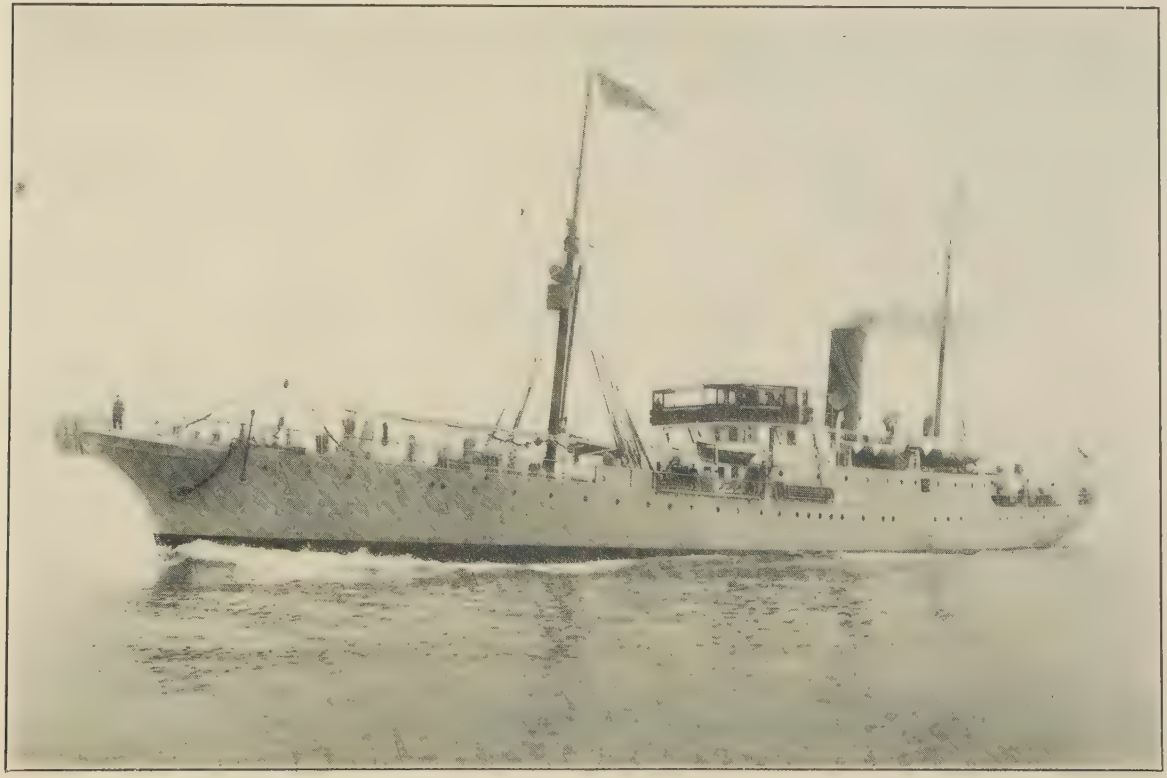
Another link was recently added to the chain with the announcement by All American Cables, Inc., of the opening of their new extension to Porto Rico. This latest achievement—the completion of the first American cable to Porto Rico—represents but a step in the policy of the company to offer adequate cable facilities to every important city in Latin America and, there, to knit more closely together the peoples of the three Americas. Other extensions that have also been made recently are those between Guayaquil, Ecuador, and Lima, Peru; Colon and Cartagena, Colombia; Buenos Aires and Rio de Janeiro; Buenos Aires and Santos; and between New York and Santiago de Cuba.

In discussing the present conditions of the company, President John L. Merrill spoke particularly of its remarkable growth during the last few years.

"The All American cables system of today embraces the Mexican Telegraph Company and the Central and South American Telegraph Company. The former was established in 1879 and the latter in 1881. The name All America (often misspelled All American) was chosen as the most fitting phrase to designate a service dedicated primarily to the needs of the three Americas—South, Central and North. All America Cables now has more than 23,000 statute miles of submarine telegraph lines and more than 3,000 miles of landlines.

"In the fifteen countries served by the two component parts of All America Cables, Inc., there are maintained forty-four offices, manned by trained commercial and technical staffs. Skilled workers watch over the efficiency of office apparatus and landlines; a fleet of cable ships is constantly cruising the high sea lanes, ready for any emergency.

"All America Cables is proud of its physical and mechanical equipments; it is more than proud of its personnel, because it is to the members of our staff that we must look for that spirit which is the essence of Service.



S. S. ALL AMERICA

Cable ship of the All America Cables, Inc.

"To this Spirit of Service we attribute the record of Achievement of the last forty years—a record which reveals constantly broadening range of activity, constantly increasing speed and accuracy in the transmission of messages entrusted to us, and a steadily diminishing cost.

"Cablegrams are now being sent from the New York office to Buenos Aires without retransmission by hand. That means that despatches travel 7,452 miles purely by automatic methods, without the intervention of a single operator.

"This is done in a very few minutes—a record of speed.

"Our struggle to reduce the cost of cabling has resulted in accomplishments similarly astonishing. When the system opened its offices in Buenos Aires the rate per word was $7.50. Now the rate from New York to the capital of the Argentine is but fifty cents a word for messages sent on regular schedule, and only twenty-five cents a word for those sent on a deferred time schedule. The fifty-cent basis for messages to Buenos Aires was achieved in December, 1917, and the announcement of the change, at a time when the prices for all other services were mounting, was enthusiastically received by the governments and peoples of the three Americas.

"The All America Cables of today is the evolution of an idea. Its directors and executive officers have a purpose founded upon a sincere belief that the commercial, political, and strategic interests of the Americas can best be served by an American-owned and operated system of communication. Trade development is dependent upon ships and cables. Political progress hinges upon the proper understanding of one nation by another, and this can be attained more readily through interchange of cables of daily news.

"In faithfully pursuing our purpose, in steadfastly holding ourselves ready to serve the best interests of the Americas, and of the world, we believe we are serving a high ideal."

The home office of the All America Cables, Inc., is located in its own building at 89 Broad treet, New York City.

HOME OF THE ALL AMERICA CABLES, INC.

89 Broad Street, N. Y.

FUNCH, EDYE & COMPANY, Inc.

ON MAY 1st, 1847, the firm of Funch & Meincke was organized by C. F. Funch, a Dane, and Captain C. Meincke, also a Dane, with offices at the southeasterly corner of Wall and Water streets, for the purpose of carrying on a ship brokerage business. In 1859, Mr. A. Wendt, who had extensive German connections, was admitted to membership of the firm and its name changed to Funch, Meincke & Wendt, and offices removed to the corner of Beaver and William Streets. The new member influenced the consignment of a large number of sailing vessels under the German flag and registering from the various ports in the Baltic. These latter became quite numerous and active in the Trans-Atlantic trade at the conclusion of the Crimean War. In 1867, Mr. Wendt who had suffered a severe breakdown in health retired from the firm, and in consequence the firm name was changed to Funch, Meincke & Co., and offices were removed to 14 South William Street. The business expanded very rapidly, and consisted principally of handling vessels under the German and Scandinavian flags. Shortly after the death of Mr. Meincke in March, 1869, Mr. Funch associated himself with Mr. H. W. O. Edye (the latter having conducted a similar business in New York under the firm name of Robt. M. Sloman & Edye, and later as Edye & Brock) under the style of Funch, Edye & Co., and offices were taken at 27 South William Street, where they remained located for 25 years later. The business increased very rapidly, and at times during 1879-81 as many as 150 vessels under Scandinavian, Russian, German, Italian and Austrian and British flags were in port at one time to the firm's consignment. In 1871 steamers were added to the consignment and in consequence of a large number of sailing vessels having been loaded on the berth to various Belgian, Scandinavian, Holland and German ports, these activities were gradually transferred to steamers. In 1872 the Red Cross Line was inaugurated with steamers under the Belgian flag and carried on a regular service between Antwerp and New York. Later the Eagle Line which operated with general cargo between New York and Stettin and was subsequently merged with the Hamburg American Line, for which the firm also became freight agents. In further development of liner business the firm acted as agents of the Netherlands American S. S. Company, now known as Holland American Line; Thingvalla Line, later absorbed by Det Forende Dampskibs Selskab and styled the Scandinavian American Line; the Nouvelle Cie Bordelaise de Navigation a Vapeur; United Tyser Line; U. S. & Java Line; U. S. & China Japan Line; U. S. & Brazil; Hansa Line to South

Africa; Hansa Line to India; Royal West India Mail. In 1915 all connections with German Lines were severed and such services were replaced by steamers under British and Holland flags. In 1917, on January 1st, the firm was incorporated and is continued as Funch, Edye & Company, Inc.

SUSQUEHANNA STEAMSHIP CO., Inc.

THE SUSQUEHANNA STEAMSHIP CO., INC., was incorporated under the laws of the State of New York in 1917.

Their first steamer was the S. S. "Susquehanna." After extensive repairs and reconditioning was done this steamer was started in the Transatlantic General Cargo Trade, and was the nucleus of a very extensive and flourishing steamship business.

Shortly after the acquisition of this steamer she was requisitioned by the United States Government and was used for war purposes until December, 1918. After her return she was again put into the Transatlantic Trade.

In 1919 the Steamers "Lydia" "Redondo" and "Sacramento" were acquired and were also put into the General Transatlantic Cargo Trade, under the operation of the Susquehanna Steamship Co.

In the early part of 1921 the Company acquired the Baltic Service berth and were allocated steamers by the United States Shipping Board for operation in this trade and they have successfully covered this route and improved and increased its efficiency.

The officers of this company are Mr. Frank Auditore, President, who is one of the successful business men in the steamship business; his brother, Joseph Auditore, was associated with him until his death in May, 1920. In 1920 Mr. Joseph D. Phillips, who is a well known steamship man of many years, joined the organization as vice-president and general manager, and in March, 1921, Mr. John B. Austin, Jr., joined the organization in charge of the Baltic Service. Mr. Joseph G. Stockham, Secretary, has been associated with the President and his brother for the past sixteen years, and is one of the well known shipping men down-town having been in the steamship business for the past thirty-three years.

This Company will be one of the largest factors in the steamship business as time rolls on and we wish them every success.

CHARLES H. POTTER

CHARLES H. POTTER has been actively associated with the shipping industry for the past thirty-three years. In the year 1886 he entered the employ of Parsons & Barnes, ship brokers, 36 South Street, New York; in 1889 Captain Cyrus W. Chadwick, a well-known ship master, and Mr. Potter organized the firm of Chadwick & Potter to transact a general ship brokerage business, which partnership continued up to 1899, in which year Mr. Potter sold out his interest and joined the Luckenbach Steamship Company; after seventeen years' continuous service with the Luckenbach interests, Mr. Potter resigned and organized the Potter Steamship Company, Inc., and the Potter Transportation Company, Inc., of which companies he is the President, located at 11 Broadway, New York City.

Mr. Potter was elected President of the United States Ship Operators' Association in October, 1919, and re-elected for second term in 1920. This Association was formed in 1919 to "promote and advance the economical management and operation of American vessels, government owned and otherwise; to co-operate with the United States government officials and to facilitate the administration of its bureaus having jurisdiction over maritime matters; to work for the improvement of laws, regulations and rulings and to secure uniformity in customs and usages in relation thereto; to diffuse accurate marine information and to strengthen and enlarge friendly intercourse between men engaged in and about ships and shipping; to the end that the Merchant Marine of the United States may attain its greatest efficiency."

Mr. Potter, in April, 1920, was elected to serve two years as a Director of the Maritime Association of the Port of New York, resigning in 1921 to assume the duties of Vice-President, to which office he was elected. Owing to the death of President F. F. Boulton in August, 1921, Mr. Potter was called on to assume the duties of President of the Association.

Mr. Potter is an ardent worker for an American Merchant Marine, serving on various committees working in conjunction with the U. S. Shipping Board.

He is a member of the Chamber of Commerce of the State of New York, the New York Board of Trade and Merchants' Association.

THE SCANDINAVIAN-AMERICAN LINE

SERVICE has been the constant keynote of the United Steamship Company of Copenhagen ever since its inception. And the growth and steadily perfected development of this ideal of service is strikingly shown in its present important position.

Favored today, alike by those who cross the Atlantic for pleasure and for business, the Scandinavian-American Line—the descriptive name under which the company operates its passenger service between the United States and the Scandinavian countries—typifies everything that makes ocean travel a delight.

Any sketch of the Scandinavian-American Line and its fleet of commodious comfortable ships would be incomplete without a brief mention of the various stages of the company's history. We believe you will find this condensed history of interest.

Amalgamating several smaller shipping firms, the United Steamship Company of Copenhagen was formed in 1866 and began business the following year. With a fleet of 22 steamships, having a total register tonnage of 4,919 tons net, regular routes were maintained between the various ports in Denmark, and in addition, to Kiel, Stettin, Koenigsberg, Antwerp, London, Hull, several Norwegian ports, the Faroe Islands and Iceland.

Noting the dates that follow, marking the most decisive advances in a very rapid growth, enables you to get a clear idea of the ever-increasing importance of this company.

1875 saw the completion of the harbor of Esbjerg, on the west coast of Jutland, and with it the regular operation of a line of steamships between that port and England.

1880 was the date of still further expansion, when the important export routes for agricultural products, between Copenhagen and Newcastle, England, were taken over. This was followed closely by the acquisition of still other routes between Danish provincial ports and Newcastle. And it is noteworthy, that since 1884 the handling of Danish agricultural exports to England (with the exception of the route between Copenhagen and Leith) has been taken care of solely by this company.

1882, shortly after the opening of the St. Petersburg Ship Canal, the company again broadened its activities, and a line of steamships was put in operation between Antwerp and St. Petersburg.

1883 was likewise an important development year. It saw the extension of the company's service to Havre as a port of regular call; and a still further extension of its service to Mediterranean ports.

1886 was another progressive year, when a route to Hamburg was established; and one between Antwerp and Riga.

1887 opened up still other new routes—one to Hangö (Finland) and one to Oporto-Lisbon, with the extension of this route to Madeira in 1893.

1895 marked an epoch in the company's history. Busy as they had been up to this time, in developing their many European routes, attention was now turned to the development of the company's first route between Copenhagen and United States ports. Six big steamships were built and named "Kentucky," "Arkansas," "Louisiana," "Florida," "Alabama" and "Texas." These steamships plied between Copenhagen and New Orleans, and in addition to great cargo capacities provided accommodations for a limited number of cabin passengers.

1898 witnessed still more important developments, for in this year the company took over the "Thingvalla Line," a long-established passenger service line between Copenhagen and New York. With the accession of this line, immediate steps were taken to put its trans-oceanic service on the highest plane of efficiency. New twin-screw steamers of the most modern type were built expressly for this service between Scandinavian ports and New York.

1899 the company established a regular service between Boston and Copenhagen.

1903-1904 initiated the opening of regular sailings between Scandinavian ports and Philadelphia, Newport News and Baltimore.

1907 saw still another addition to the company's service, with the establishment of the line to Buenos Aires, South America.

And as a result of this steady progress, of this intelligent expansion of its service, by the end of 1913 the company's fleet included 130 steamships and 14 seagoing lighters, with a total gross tonnage of 177,290 tons.

1914 the service of the Company's Lines was still further augmented with the commissioning of several new ships. The most notable of these were the "California," the largest vessel afloat driven by Diesel motor engines; and the magnificent passenger steamer "Frederik VIII."

The main office of the company is at Copenhagen but all matters relating to American business are disposed of by the New York office which is located in the Scandinavian-American Line Building at 27 Whitehall street. Agencies are maintained in Chicago, Minneapolis, Boston, San Francisco and Seattle.

S. S. FREDERICK VIII

Latest addition to the passenger fleet of the Scandinavian-American Line

SINCLAIR NAVIGATION COMPANY

SINCLAIR CONSOLIDATED OIL CORPORATION, founded by H. F. Sinclair, has become in recent years an important factor in the development of New York Harbor. This corporation which is engaged in all branches of the petroleum industry, has built up an organization covering a large part of the United States, and extending into many foreign countries.

The executive headquarters are in New York City,—housed in one of the finest "sky scrapers" on the Island of Manhattan, the building having been bought for this purpose in 1919.

The Sinclair company was fortunate enough to obtain one of the few remaining water front sites in New York Harbor. This property, which is known as Tremley Point, lies south of the Bayway plant of the Standard Oil Company of New Jersey, with a frontage of about one thousand feet on the Arthur Kill, and with ready access to the trunk railway systems running out from New York on the Jersey mainland. It is not publicly known just how extensive will be the improvements on this valuable property, but there has already been established a fuel oil installation which in its design suggests that it will eventually be a part of a large petroleum refinery. In the meantime Sinclair ships and barges are plying New York waters, and the steady increase in these activities indicates that New York Harbor will be one of the most important centers of Sinclair operations along the Atlantic Seaboard.

The Sinclair company is strongly entrenched in and about Philadelphia, as well as in and about Providence, Rhode Island. One of its subsidiary companies, the Union Petroleum Company of Philadelphia, has a large plant at Marcus Hook, and this terminal has been considered its chief exporting point. The Union Petroleum has for years been one of the largest American exporters of petroleum products in bulk.

The volume of business moving out of the Marcus Hook terminal has been growing, but shipping men have directed attention to the fact that the Gulf ports are also attracting a liberal percentage of Sinclair shipments, due to the strategic locations of its refineries and terminals at New Orleans and on the Houston Ship Channel. On the other hand, it should not be overlooked that much of the Sinclair production of crude oil in Mexico may logically be expected to find its way to the Atlantic Seaboard, and that in the next few years the Atlantic ports may be further helped by the bringing in of oil on the Sinclair holdings in Costa Rica and Panama, and also on the west coast of Africa. The potentiality of these holdings, coupled with the rapid extension of Sin-

clair activities in Europe, give assurance that the Atlantic coast ports will figure largely in Sinclair shipments.

The Sinclair subsidiary which owns and operates the Sinclair fleet, is the Sinclair Navigation Company. Most of its tankers are of the latest and most improved design. The total tonnage according to latest reports is 177,348 tons deadweight, plus 1,009 gross tons of ocean going tugs. This fleet which has no funded indebtedness of any kind against it can handle from 16,000,000 to 20,000,000 barrels of oil annually, according to ports served.

Most of these tank ships were designed and built under the supervision of J. G. Johnson, vice-president and director of the Sinclair Navigation Co.

The Sinclair company also owns and operates a number of bulk oil tank barges of about 32,000 tons deadweight. These barges are used at various points of distribution in the United States, Cuba and Mexico.

In addition to this fleet the Sinclair Consolidated Oil Corporation and one of its affiliated French companies, the Mazout-Transports, have nearing completion two 9,000-ton tankers named "C. I. P." and "MOTRIX." These boats will be used exclusively in the French-American trade.

SPIRE PITOU & CO.

THE present firm of Spire Pitou & Company, whose senior partner is a son of the Spire Pitou who for nearly fifty years was in the shipping business at 17 State Street, when the Pilots Association had their offices there and whose Pilots took to sea the barrel oil sailing vessels bound for France. This was at a time when Mr. Pitou's father shipped crude petroleum to France in barrels on schooners. Now the son is chartering tank steamers to carry gasoline in bulk. Some change in business during forty years, but the firm has only moved once in that time from 17 State Street to 141 Broadway, where it now is located. Mr. Spire Pitou's partner is Mr. Frederick G. Kinscherf who has also been in the shipping business a great many years. This firm is doing a general chartering business and also acting as agents for foreign vessel owners. They have close relations with a great many of the biggest merchants and exporters in and out of the city and are rated as a very old and high-class firm.

SIR JOSEPH W. ISHERWOOD, BART

WHILE, strictly speaking, there is no place in the list of those who have made the Port of New York the greatest maritime haven in the world, for Sir Joseph Isherwood, Bart., at the same time it is felt that no history of New York harbor would be complete without fitting reference to the founder of the Isherwood System of ship construction.

Quite outside of the commercial advantages of vessels built on the Isherwood longitudinal system, such as economy in building and operation and increase of cargo capacity without increase in draft, Sir Joseph has done something for mankind -and especially for the men whose lives are spent on the seven seas, that must not go unheralded to or unnoticed by those on shore who scan these pages.

Tank steamers—the type of vessel that came into being in comparative recent years when the transportation of oil in bulk grew into large proportions—were considered a great hazard, not only in the matter of safety for the cargo but safety for the lives of their crews as well. In certain heavy seas these "tankers" were wont to have their "backs broken" through strain, and many a ship of this type broke in two and disappeared without a word ever being heard from those who had been aboard. It was Sir Joseph—then plain Mr. Joseph Isherwood, expert surveyor of Lloyd's Register of Shipping and a naval architect of exceptional sagacity—who hit upon the longitudinal construction of ships and found that "tankers" built upon his plan would survive any ordinary bad weather and would, even when struck in a collision, provide the maximum safety for the men on board.

The great test of the new system came when the world war broke out; when all maritime governments availed themselevs of the Isherwood system and saved precious days by reason of the faster construction of oil carriers that were built on the Isherwood plans. In this way Sir Joseph unquestionably did much to help win the war for the Allies and also, be it remembered, saved many hundreds of lives because the "Isherwood ships" were safer vessels than were ever built before.

It was in recognition of his expertness as a naval architect and the consequent aid he gave the Allies, apart from the humanitarian side of his research work, that King George V knighted the famous inventor and created him a Baronet of the United Kingdom; an honor which, in Sir Joseph Isherwood's case, was highly merited and one that has met with approbation throughout the entire maritime world.

BARBER & CO., INC., AND ITS SUBSIDIARIES

WHEN the question of the substantial and tested eminence of New York as a shipping center comes to mind, it brings up the thought of the great enterprises, long active, which have for years stood as exemplars of the city's importance in maritime affairs. Of these none is more representative or better known than the firm of Barber & Company, Inc., and its subsidiaries.

Many years ago—in the early 1880's to be exact—the "Monarch Line" was inaugurated. It was a steamship line, operating between New York and London. The company owned five steamers, each of about five thousand tons, deadweight, and having a speed of from ten to ten and a half knots. This line was fostered and managed by Messrs. John Patton, Jr., & Company, of London, their New York agency being styled Patton, Vickers & Company. The "Company" of this firm was Mr. Herbert Barber, who had come from England to establish himself in New York for the purpose of representing the Monarch Line here. He brought with him an excellent equipment for that service, having had, even at that time, many years of practical and informing experience in the steamship business.

The Monarch Line was finally bought out by other companies in the latter part of 1886, and Herbert Barber, together with his brother James, who had previously handled the chartering end of the business here, established the firm of Barber & Company, in January, 1887.

Several years after the inception of Barber & Company, it was incorporated, since which time it has been known as Barber & Co., Inc. Since that time the growth of the company has been phenomenal, the business extending in all directions until the operations of the Barber enterprise have become practically world-wide, with operations so extended that it became necessary, as the business grew, to form other companies as adjuncts to their business. This necessity also led to the formation of Barber Steamship Lines, Inc., which company took over the handling of the entire steamship end of the business, Barber & Co., Inc., continuing as the parent and holding company of all of the other companies.

The family of Barber corporations, as it now stands, is a very formidable and comprehensive one, the corporations being enumerated, with their special objectives, as follows:

Barber & Co., Inc., the parent company, having supervision over all of the others.

Barber Steamship Lines, Inc., handling the general steamship business and representing many well established lines of overseas transportation.

Barber Sailing Ship Lines, Inc., handling the sailing ship business of the Barber enterprise.

Macona Steamship Corporation, steamship owners.

New York & Oriental Steamship Co., Inc., steamship owners.

La Plata Steamship Co., Inc., steamship owners.

Atlantic Piers Co., Inc., handling the terminals, and also the receiving and delivery of cargo.

Atlantic Towing Co., Inc., handling the shifting of barges.

Pier Machine Works, Inc., handling the repairs of steamers.

Atlantic Stevedoring Co., Inc., handling the loading and discharging activities of the Barber lines.

Virginia Coaling Corporation, which attends to the supplying of bunkers.

Through these various corporations the activities of Barber & Co., Inc., constitute a very large and most efficiently self-contained organization, covering all of the various departments and port activities connected with overseas transportation by steam and sail.

ALEXANDER & BALDWIN, Ltd.

ALEXANDER & BALDWIN, LTD., was incorporated on June 30th, 1900, under the laws of the Hawaiian Islands, as sugar factors and commission merchants. The main office is in Honolulu, and branches are maintained at San Francisco, Seattle, Kobe, Yokohama, and New York. The present officers are:

W. M. Alexander, President and Director; H. A. Baldwin, Vice-President and Director; J. Waterhouse, Vice-President and Director; W. O. Smith, Vice-President and Director; John Guild, Secretary and Director; C. R. Hemenway, Treasurer and Director; F. F. Baldwin, Director; A. L. Castle, Director; J. R. Galt, Director; D. B. Murdoch, Auditor.

W. M. Alexander, San Francisco; John Waterhouse, Honolulu; E. R. Adams, Seattle; J. D. Oakley, Japan Offices; C. A. Dann, New York.

The capital stock of the organization is $7,500,000.00, comprised of 75,000 shares with a par value of $100.

NEW YORK HARBOR'S LARGEST SHIPBUILDING YARD

OCCUPYING 170 acres, with a water frontage of 2,400 feet on the Hackensack River, the Federal Shipbuilding Company is the largest shipbuilding yard in this vicinity. The extensive facilities of the plant with its eight launching ways, permanent shops of steel and concrete construction, floating drydock and very modern equipment, offer unusual advantages for the construction and the repair of all types of merchant vessels.

The plant, which is a subsidiary of the United States Steel Corporation, was commenced in August, 1917. The first vessel was launched in June, 1918, and delivered in October, 1918. Since beginning of operations and up to December 31, 1921, fifty vessels of five different types have been built, consisting of thirty single screw cargo vessels of about 9,600 tons deadweight capacity delivered to the Emergency Fleet Corporation, thirteen single screw cargo ships of two different types around 9,600 tons deadweight delivered to the Isthmian Steamship Company, five twin screw tankers of 15,100 tons deadweight delivered to the Standard Oil Company of New Jersey, and two smaller vessels for other companies, as well as several more barges and car floats. The normal capacity of the yard is about 24 vessels constructed per year, with a working force of some 6,000 employes.

The general plan of the yard shows the completeness of its shop buildings, storage and transportation. There are seventeen locomotive cranes, four locomotives and seventy railroad cars to assist the handling of materials needed for the various manufacturing shops.

At the shipways, material is handled by portable tower cranes operated by electricity on 40-foot gauge tracks between the ways. The length of travel in each case is about 450 feet. There is one tower crane between each pair of ways. Each of the portable towers carries two booms; all of the derrick booms have a capacity of 15 tons at a maximum reach of 65 feet. The lower ends of the derricks are 65 feet above the rails and the towers are built with open frame work, giving a clear height of 20 feet under the towers, so that freight cars and locomotive cranes can pass down the ways underneath the towers. Two standard gauge railroad tracks extend down the length of the ways between the tower rails, so that material can be brought on cars to the exact location on the ways where it is to be erected. Space is also available between the ways for the temporary storing of a limited amount of fabricated material. The portable tower shipway cranes were designed and built by the Federal Shipbuilding Company in conjunction with the American Bridge Company.

At the head of the shipways and about 275 feet distant from them is the main plate shop, 800 feet long by 175 feet wide, which extends parallel with the waterfront. The wide space between the plate shop and shipways is used for the assembling of such parts of the vessels as bulkheads, transoms, deckhouses, tanks, skylights, etc. Ground assembly is further facilitated by an overhead crane runway with a span of 71 feet 3½ inches, carrying three electric traveling cranes, one of 35 tons capacity and the other two of 20 tons capacity each, immediately outside of the plate shop. Over the plate yard, immediately behind the plate shop, are two crane runways, on each of which are installed two overhead electric traveling cranes of 10 tons capacity each and two of 5 tons capacity each.

The plate shop itself is divided into three bays extending the full length of the building, each of which is served by three 10-ton overhead traveling cranes. The plate and angle furnaces are at the north end of the shop, and in an extension of 120 feet long at this end of the building is the angle-smith shop. The plate shop is thoroughly equipped with the latest types of fabricating machinery. Material at the punches is handled on Lyscholm punch tables, and all of the larger machines are equipped with individual electric or chain hoists operated on jib cranes. The arrangement of the machinery in the plate shop is such that the material passes in progressive steps from the plate yard in the rear of the shop to the assembly yard on the way side. Over the plate shop at the southern end are the joiner and carpenter shops, while at the northern end is the mold loft.

Down the river, immediately below the shipways, is a wet basin used as a fitting-out berth, which has a capacity for fitting out eight vessels at one time. Near the fitting-out berth are a paint shop, ship riggers' shop, pipe shop and storehouses. A space at the end of the wet basin is reserved for the storage of pipe and fittings. Material is handled at the fitting-out berth by locomotive cranes, and for heavy weights such as boilers and engines a stationary three-leg jib crane of 100 tons capacity has been erected. This crane was designed and built by the Federal Shipbuilding Company in conjunction with the American Bridge Company.

Located at the wet basin is a floating drydock constructed with wooden pontoons and continuous steel wing walls. This dock will handle vessels up to 500 feet in length and is controlled electrically from an operating house at the head of the wet basin. The pontoons were built and launched from yard's ways, while the steel wing walls were fabricated in the shops and the complete dock was erected by the Company's forces during the early part of 1921.

GENERAL VIEW OF THE FEDERAL SHIPBUILDING COMPANY'S YARDS

In addition to the plate shop, the yard is equipped with a machine shop, forge shop, boiler shop, foundry and carpenter shop. Each department is housed in a separate building, and all of the buildings are of steel, glass and tile construction.

Power is furnished from the Public Service station in the form of electricity at 13,000 volts, which is stepped down to 2,200 volts for operating the air compressors, 400 volts alternating current and 250 volts direct for general machine use, and 110 volts single phase for lighting purposes. In the power house are five air compressors supplying a total of 22,000 cubic feet of free air per minute. Two of the compressors are Ingersoll-Rand machines, one with a capacity of 5,400 cubic feet and the other of 2,700 cubic feet of free air per minute. The other three compressors are of the Laidlaw-Dunn-Gordon cross compound type, each with a capacity of about 4,400 cubic feet of free air per minute. In the power house there is also a hydraulic plant with a capacity of 450 gallons per minute at 1,500 pounds per square inch pressure, consisting of three Dean hydraulic pumps and two accumulators supplied by the Camden Iron Works.

The machine shop is 500 feet long and 123 feet 8½ inches wide, with two side balconies each about 30 feet wide. In the central bay are two 50-ton Cleveland overhead electric traveling cranes, each of which has a 10-ton auxiliary hoist. The heavy planers and boring machines for machining stern frames, propellers and shafting are in the center bay, while the lathes and lighter machinery are in the north and south bays. The manufacture of propelling machinery such as turbines, reciprocating engines, condensers, etc., is well established.

A special feature of this yard is the splendidly equipped shop for building Scotch boilers. The shop itself is 500 feet long and 161 feet 6 inches wide, to which an extension 85 feet long has been added. The shop has a capacity for turning out annually 175 three-furnace, single-end Scotch boilers each 15 feet 6 inches diameter by 11 feet long with a heating surface of from 3,500 to 3,600 square feet.

The shop is divided into three bays. The center bay is served by three overhead electric traveling cranes of 50 tons capacity each: the eastern end of the bay is utilized as an erecting floor, and the western end for the bending, drilling and riveting of the heavy shell plates. The equipment here includes a set of Southwark vertical bending rolls; one 200-ton bull riveter; one 150-ton bull riveter; two 75-ton bull riveters and two 90-ton portable riveters; one three-head Bethlehem shell drill, and one three head shell drill built at the yard.

In the south bay are the machines for punching, shearing, planing and drilling the plates. The equipment includes sixteen radial drills, several long-arm radial drilling and countersinking machines, three plate planers, bending rolls, etc. Jib cranes with chain hoists are provided for handling material at the larger machines, and this bay is also equipped with two 20-ton overhead electric traveling cranes with 5-ton auxiliary hoists. At the west end of the bay are the furnaces and bending slabs and sectional flanging machines. The northern bay, served by two overhead traveling cranes, is used principally for the lighter sheet metal work, such as casings, uptakes, tanks, etc.

The forge shop is 300 feet long by 151 feet wide. Part of this building is used as a drop forge shop, and is equipped with six Erie steam hammers ranging from 400 pounds to 2,000 pounds, two Ajax riveting machines and a die sinking department. The rest of the building is taken up with solid smith work, for which six Erie single-frame steam hammers, ranging from 800 to 1,500 pounds, are provided. There is also a United Engineering 350-ton hydraulic press. The center bay of this shop is served by a 15-ton overhead electric traveling crane supplied by the Erie Steel Construction Company.

In addition to the above, there is a foundry 300 feet long by 103 feet wide equipped with two iron cupolas, each with a capacity of 12 tons. The foundry is also provided with equipment for furnishing brass castings up to one ton. The center bay of the foundry is equipped with two 20-ton Milwaukee overhead traveling cranes.

The main offices of the company are located in a two-story general office building 420 feet long by 55 feet wide, near the main entrance. The administration offices are on the first floor of the building and the engineering department on the second floor. At the main entrance are the time clocks and employment offices, and nearby is a well equipped emergency hospital.

THE VULCAN IRON WORKS

THE VULCAN IRON WORKS, INC., was established in 1848. In 1915 they acquired the property of Alex. Miller & Bro. In 1919 they purchased the plant of Theo. Smith and Sons Company and in 1920 they acquired the properties of the Burt and Mitchell Dry Dock Company, Brown Dry Dock Company and Grymes Engineering Company.

The work consists of general repairs to steel and iron vessels, the building of boilers, engines (reciprocating and turbine), general machine and blacksmith work and the manufacture of buckets and other dredging machinery.

In 1902 they built the pilot boat "New Jersey" for the New Jersey State Commission. Later the following fire boats were constructed for New York City—"Thomas Willett," "James Duane," "Cornelius Lawrence," "New Yorker" and the Western Union Cable steamer "Robert Cleary."

In 1920 they installed the first entire electric propelling equipment in the steamer "Eclipse" for the United States Shipping Board, and also the propelling equipment with Diesel engines in a number of merchant steamers.

They have a complete floating repair and electric welding plant —equipped with air compressors, steam-driven electric generators and a complete machine shop.

In addition to the modern machine, boiler, blacksmith and woodworking shops, they operate five dry docks.

The plant is located at the mouth of Morris Canal Basin at Jersey City opposite the Battery, New York City.

The officers of the Company are A. J. Grymes, president; L. S. Parker, vice-president, and G. F. Fischer, secretary.

P. KLEPPE & CO., Inc.

THE firm of P. Kleppe & Co., Inc., was incorporated in New York in 1917 for the purpose of conducting a general shipping and ship brokerage business. In 1919 this Company formed The North & South Line, Inc., and operated a regular freight service from New York to Rio de Janeiro, Santos and Buenos Aires. The name of this service was later changed to Kleppe Lines under which designation it now maintains monthly sailings from New York and Philadelphia to South America. A ship brokerage department is also maintained as part of the organization and considerable business is done with its connections in the United Kingdom and Scandinavia. The officers of P. Kleppe & Co., Inc., are: President, K. A. Kleppe; vice-president, Sigurd Kleppe; secretary, F. Riker Clark; treasurer, G. Grundesen.

PAN AMERICAN PETROLEUM AND TRANSPORT COMPANY
MEXICAN PETROLEUM CO., Ltd.,
of Delaware
MEXICAN PETROLEUM CORPORATION

THE recognition of the supreme importance of fuel-oil for shipping, and the conversion of ships from coal to oil burners, amongst which are some of the largest vessels afloat, is the most striking development in the shipping world during the post-war period. There are today 2,536 vessels fitted for burning oil, or 20% of the world total, which is more than nine times larger than the number of oil-burning ships in 1914. There is nothing at the moment of greater significance for the efficiency of shipping than an assured supply of fuel-oil.

The Mexican Petroleum Company, Limited, of Delaware, through a subsidiary (the Huasteca Petroleum Company) is the largest exporter of fuel-oil from Mexico. During the year 1920 the shipments amounted to over 25,000,000 barrels. The Company's properties in Mexico cover vast tracts of proven land, with incalculably rich deposits of petroleum. The Company has more than 400 miles of pipe line, and the Topping Plant at Tampico can handle 120,000 barrels daily. The oil storage station near the wharf, the Topping Plant, work shops, offices, etc., cover an area of 652 acres, and the wharf has adequate accommodation for the loading simultaneously of three large tankers.

For the effective and economic handling of the oil a large fleet of tankers has been built; these tankers are owned by the Pan American Petroleum & Transport Company, which controls the Mexican Petroleum Company, Limited, of Delaware. These ships are engaged in shipping oil between Tampico and ports in North and South America and Great Britain. The fleet of tankers consists of 31 ships which average about 9,000 tons each. The rapid growth of the Company is shown by the fact that eight years ago the total tonnage of ships owned was 38,425; today the total dead-weight tonnage of the Company's tankers is 272,493.

The Mexican Petroleum Corporation and other subsidiary companies of the Mexican Petroleum Company, Limited, of Delaare, own distributing stations in North and South America and Great Britain and a refinery at Destrehan, La., which can treat 30,000 barrels of oil daily. The distributing stations are well-equipped with piers, storage tanks, loading racks, tugs, barges,

motor trucks, etc. The storage tanks at the stations and refinery have a total capacity of 5,118,745 barrels. Each station is provided with the most modern appliances for handling oil expeditiously. Where it is necessary to deliver oil from barges, rather than direct from the tanks, every efficient facility is utilized so that the largest passenger steamers are bunkered in the minimum of time.

Stations are erected, or being erected, at all important ports from Portland, Maine, to Buenos Aires, in Argentina, and in Great Britain. The stations already completed are:

Portland, Me.; Chelsea, Mass.; Fall River, Mass.; Providence, R. I.; Carteret, N. J.; Passaic, N. J.; Norfolk, Va.; Jacksonville, Fla.; Tampa, Fla.; New Orleans, La.; Destrehan, La.; Galveston, Texas; Cristobal, C. Z.; Para, Brazil; Pernambuco, Brazil; Bahia, Brazil; Rio de Janeiro, Brazil; Santos, Brazil; Montevideo, Uruguay; Buenos Aires, Argentina, and in Great Britain at Avonmouth, Glasgow, Liverpool, Southampton, South Shields and Thames Haven.

The main offices of these companies are: 120 Broadway, New York City and Los Angeles, Cal.

NEW YORK AND CUBA MAIL S. S. CO. "THE WARD LINE"

THE NEW YORK & CUBA MAIL STEAMSHIP COMPANY, operating the "Ward Line" of passenger and freight steamers, has its general offices at the foot of Wall Street, East River. Its numerous and well-equipped fleet covers the principal ports of Europe as well as the Bahamas, Cuba, and the Mexican Gulf Ports, and it maintains agencies in all the principal cities of the United States, Europe, Mexico and Cuba.

The officers of the company are as follows: Alfred Gilbert Smith, President; William D. Macy, Vice-President; Joseph Hodgson, Vice-President; H. E. Cabaud, Vice-President and Secretary; Wm. Harry Smith, Vice-President, Havana; R. C. MacBain, Treasurer; M. O. Fano, Assistant Treasurer; H. E. De Bedts, Assistant Treasurer; W. F. Paton, Assistant General Traffic Manager and General Passenger Agent; W. S. Hulick, Assistant General Passenger Agent; Theodore Bowker, General Freight Agent; H. R. Warner, Assistant General Freight Agent; W. D. Carter, Auditor; Wm. Imlay, General Claim Agent; Frank E. Pearce, Freight Forwarding Agent; C. C. Oakes, Marine Superintendent; James Cotter, Port Steward and Purchasing Agent; R. J. Griffith, Terminal Superintendent.

ROBERT H. LAVERIE

ROBERT H. LAVERIE, who is one of the best known experts on either side of the Atlantic in ship construction, superintended the production of more than 100 ships for the French government in its efforts to replace the tonnage lost in the great war. In connection with this work and the building of other vessels already delivered, Mr. Laverie superintended the construction of yards in Portland, Ore., and Tacoma, Wash., and probably has handled as large a volume of administrative problems as any man identified with world reconstruction problems.

Mr. Laverie has been identified with ships and ship construction throughout an active life. He is a native of Glasgow, was educated there, and later entered the shipyards of D. & W. Henderson, on the Clyde. There he received the groundwork of training for a career which was to prove one of exceptional interest. In the course of time Mr. Laverie went to the shipbuilding plant of G. T. Davie & Sons, Quebec, where he remained five years. Then, progressing steadily in the scale of responsibility, he worked for a half dozen of the principal organizations engaged in ship construction. These included the American Steel Barge Company, West Superior, Wis.; the Cramps' Yard, Philadelphia; Newport News Shipbuilding Company; Herreshoff Company, Bristol, R. I.; Fore River Shipbuilding Company, Quincy, Mass.; Crescent Shipyard Company, Elizabeth, N. J.; Townsend & Downey Company, Mariner Harbor, N. Y., etc.

In 1910 Mr. Laverie was made chief surveyor in America of the Bureau Veritas International Register of Shipping, one of the best known institutions in the shipping trade of the world. Mr. Laverie's unusual experience especially fitted him for this post, in which he met with success of the first order. Then the coming of war brought a demand for shipping brains such as the world never had known. It was in the nature of things that a man such as Mr. Laverie should be called upon to take an important part in maintaining the fleets of the Allies. His help has been instrumental in the creating of a large new tonnage which now flies the French flag. Not only has Mr. Laverie directed the construction of new ships for the French, but also has handled the repair and alteration of many craft acquired in various stages of usefulness. And his work has not been wholly for France in recent years, because he also has assisted American ship owners with their problems. Just now he is engaged in work which will occupy his attention for some time to come.

Mr. Laverie is a member of the Society of Naval Architects and Marine Engineers, the Maritime Association of the Port of New York, Canadian Society of New York, Arts and Science and Whitehall Clubs. He is President of the firm of Robert H. Laverie, Inc.; also President of the Mariner Harbor Building Loan Association, etc.

LAMPORT & HOLT, Ltd.

THE name of Lamport & Holt and the blue, white and black funnel of their steamers are familiar on all trade routes leading to South America.

The firm was established in 1845 and at that time trade was maintained by sailing vessels. Later steamships were adopted and today the fleet is a modern one of fifty steamers, including several of the most up-to-date types.

Services are maintained between New York and Brazil and River Plate. The Lamport & Holt Line is the pioneer passenger carrying service to South America and the Company's policy of progress has resulted in the building of a fleet of palatial passenger liners, the most recent addition being the turbine steamer "Vandyck," which will take her place on the New York berth early in 1922.

In addition to the New York South America services the Lamport & Holt Line maintains freight communications between Liverpool, Glasgow, London and Brazil and River Plate and also similar services from Continental ports.

In 1911 Lamport & Holt became incorporated as a limited liability Company with Sir Owen Philipps as Chairman and Lord Pirrie, Mr. Arthur Cook and Mr. George H. Melly as Directors. The two last named gentlemen were partners in the original firm of Lamport & Holt. In February, 1920, the Marquess of Carisbrooke was appointed as a Director.

During the war the vessels of the Line took a prominent part in the conveyance of troops and war material to the Armies in France and the East.

HENRY W. PEABODY & CO.

THE firm of Henry W. Peabody and Company was established January 1st, 1867. The founder was Henry Wayland Peabody, born in Salem, Massachusetts, a descendant of Lieutenant Francis Peabody, who settled in Salem in 1635.

The New York office is at 17 State Street, with branches at San Francisco, Manila, Melbourne, Sydney, London, Capetown, Johannesburg and Buenos Aires. The business of the firm is exportation of American products and manufactures and importation of foreign products and manufactures for the United States market. With the development of international trade the business of the firm has steadily increased, until they are now among the largest exporting and importing houses of New York.

S. S. VANDYCK OF THE LAMPORT & HOLT LINE

HISTORY OF THE "MORGAN LINE"

THE original line of steamers commonly known as the "Morgan Line," was inaugurated by Mr. Charles Morgan sometime in the late forties, and was operated in the early fifties between New Orleans, Texas and Mexican Coast points with a few small steamers, the names of which are not now available. Sometime during 1858 or 1859, Mr. Morgan purchased from Mr. Cornelius Vanderbilt and added to the fleet, two other small steamers then operated between Brashear (now Morgan City) and Texas points.

In the meantime in Louisiana, public spirited men had also conceived the idea and the ambition to open up the undeveloped section of Southern and Western Louisiana and bring the port of New Orleans, then an important city, in direct connection with the resources of Texas and Louisiana, it being their ambition to make New Orleans the great export port for the whole Southwestern country.

The New Orleans, Opelousas & Great Western Railroad was organized for this purpose, and the far-flung plans of the promoters called for a line extending through Lafayette and Alexandria and across the Sabine River at a point near Thompson's Bluff, west through Texas to El Paso, thence to Mazatlan in Mexico on the Pacific Ocean.

In 1857, the first division of this Railroad, more commonly known as the "Opelousas Railroad" was completed and operated to Brashear City, a distance of eighty (80) miles, connection being made at that point with steamers of the Morgan Line and the Vanderbilt Line for Texas and Mexican points.

These steamers were necessarily of a very light draft, as the depth of water in what was then known as "Ann Channel," and later on as the "Morgan Ditch," would not admit vessels drawing more than seven and one-half feet. However, after passing though this channel, ten miles in length, and entering Berwick Bay, there was sufficient depth to permit easy docking of vessels at wharves then located at what is now Morgan City, and connections were also made at this port with steamboats plying along the inland waterways.

At this time (1857) the Opelousas Railroad had erected large cattle pens at Morgan City to take care of large shipments of cattle received by steamer from Texas points for transportation by rail at New Orleans.

What is now the Morgan's Louisiana & Texas Railroad & Steamship Company was taken over by the military authorities of the United States on May 1, 1862, and was operated and occupied by

them until February 1, 1866. The president of the Morgan Road during this difficult time was A. B. Seger, who conducted the affairs of the company with great devotion to the interest of the owners.

When taken over by the United States the Opelousas Railroad had not been completed beyond Morgan City, but was cleared, graded and ready for ties and rail for a distance of sixty miles beyond that point when the outbreak of the Civil War caused the suspension of all work.

After the Opelousas Railroad regained possession of its properties in 1866, the rail and steamship lines resumed operations, the steamship lines being controlled by Mr. Charles Morgan, traffic arrangements with the railroad providing for the movement of freight to and from Texas and Mexican Coast points in connection with the steamship lines. The steamers operated in this trade by the Morgan Line were the "Matagorda," "Alabama," "I. C. Harris" and "Harlan." In addition, the Morgan Line owned and operated the following steamers:—"Wm. G. Howe," "Clinton" and "St. Mary," all of about one thousand (1,000) gross tons each, and of about the same design with fairly good passenger accommodations.

On April 5, 1869, Charles Morgan purchased at marshal's sale the New Orleans, Opelousas & Great Western Railroad, extending at that time to Morgan City. Morgan City became for ten years the terminus of the Morgan road and from its Morgan's steamships and river boats supplied Texas and Louisiana.

In 1870, the Morgan Line added to the fleet the steamship "Hutchinson," a side-wheeler of fourteen hundred (1400) tons gross, and afterwards changed to a propeller. This steamer was followed by the S. S. "Whitney," thirteen hundred (1300) gross tons, the S. S. "Josephine," thirteen hundred (1300) gross tons, the S. S. "Josephine," thirteen hundred (1300) gross tons in 1871, and the S. S. "Gussie," one thousand (1000) gross tons in 1872. The S. S. "Whitney" and S. S. "Josephine" were later placed in the Cuban and Mexican trade.

In 1876, the Morgan Line began operating the New York-New Orleans Line with the following screw steamers: "Lone Star," "Algiers," "Morgan City" and "New York," all of about twenty-three hundred (2300) gross tons each, or a total of ninety-two hundred (9200) gross tons, steamers being used for freight exclusively.

The Morgan road, which had been projected to Lafayette, but on which track had not been laid, was finally pushed through in 1878 and the Morgan's Louisiana & Texas Railroad & Steamship Com-

pany was then organized, this being only a few weeks before Mr. Morgan's death.

In 1879, the S. S. "Chalmette" of thirty-two hundred (3200) gross tons was built and placed in the New York-New Orleans trade. It should be noted that the Morgan Line continued to operate steamers between Morgan City and Texas and Mexican Coast points, the former being known as the Texas Line, and the latter as the Vera Cruz Line, both of which were abandoned in later years. About this time the Havana Line was in operation, steamers touching on their way south at Cedar Keys and Key West, Florida, and in later years at Port Tampa, Florida, returning northbound via Key West, Florida.

In 1882, the S. S. "Excelsior" of thirty-five hundred (3500) gross tons was built and placed in the New York-New Orleans trade. The business had so increased that vessels had to be chartered while larger and faster ones were building.

In 1880 the Southern Pacific Railroad reached El Paso from the Pacific Coast and in 1883 the gap was closed at Devil's River in Texas between construction working from the west and that from the east which completed the Southern Pacific's southern trans-continental line. The first train from New Orleans reached San Antonio on February 6, 1883, and the first train from San Francisco reached San Antonio on February 7, 1883. Operation of through train service from New Orleans to San Francisco then began and continuous service was established from that date.

In 1884, the "Eureka," "El Dorado," and "El Paso" were built; in 1886, the "El Monte," and in 1889, the "El Mar." These were 14 knot ships of thirty-five hundred (3500) tons. They were followed in 1890 by the "El Sol," of forty-five hundred (4500) tons, with speed of 15 knots. At this time contracts for three more ships of the "El Sol" class were let, the "El Norte," "El Sud," and "El Rio." These ships were built and placed in commission as rapidly as possible. The last four ships were taken by the Government during the Spanish-American War and converted into cruisers. They proved so adaptable for the service that when the war was over the Government would not release them. This, of course, crippled the Line and more vessels had to be built to replace them. In the meantime, the steamships "New Orleans," "Knickerbocker," and "Hudson" were operated under charter. In 1899 and 1901, contracts were let and the "El Norte," "El Sud," "El Sid" and "El Rio," were built as rapidly as possible, followed right along by the "El Valle," "El Dia," "El Siglo" and "El Alba," all of the same design.

The organizing effect of the Southern Pacific began to be felt in 1874, when C. P. Huntington and T. W. Pierce acquired an interest in the Galveston, Harrisburg & San Antonio Railroad. From that time until 1885, when the Morgan road and the other Louisianna lines were acquired and when the famous Sunset Route was firmly established, and until 1888 when the Houston & Texas Central was acquired, and finally in 1895 when the Houston East & West Texas became part of the system, the growth of the present Southern Pacific System was gradual. But the constructive genius of its heads, including the great Harriman, steadily made its impression in the continuously increasing effectiveness of the system, until at the present time, while all of the operating companies of the Southern Pacific Lines are separate organizations, they are in practical effect one system and as such were and are the greatest industrial factor in the development and prosperity of the commonwealths through which they operate.

In 1900, the Company began building the finest piers in the country at Galveston, the far West and Transcontinental trade having assumed such proportions that both ports, New Orleans and Galveston, had to be used, and in August, 1902, the New York and Galveston Line was placed in operation with three steamers per week, in order to take care of trans-continental trade.

In the same month and year the Company took over the Cromwell Steamship Line, which added to the fleet the S. S. "Comus" and S. S. "Proteus," two combination freight and passenger steamers, each of forty-eight hundred (4800) gross tons, these steamers being operated from New Orleans proper to New York.

The Company also acquired at this time from the Cromwell Line the S. S. "Louisiana," of twenty-nine hundred (2900) gross tons. This steamer was operated from February, 1903, in the Havana Line, until she sunk at New Orleans Docks, April, 1905.

The Company continued to operate steamers from Algiers to New York, and also to Havana, up to February, 1903, when all business was transferred to New Orleans side of the river, and the docks and wharves at Algiers abandoned.

In order to meet the increased passenger business, three combination freight and passenger steamers were built in 1905 and 1906. They were the "Momus" and "Antilles," of 6,878 gross tons each, and the "Creole," of 6,754 gross tons.

The "Momus" was placed in commission in December, 1906; the "Antilles," in May, 1907, and the "Creole" was commissioned in June, 1907.

In 1909, the further increase in freight offerings necessitated an increase in the deadweight carrying capacity of the steamship lines, and to meet this demand, four fast freight steamers were built with a deadweight cargo capacity of 6,400 tons each, and speed of 15½ knots. These steamers were named and placed in service in the following order.

El Sol	August 27, 1910
El Mundo	October 1, 1910
El Oriente	October 29, 1910
El Occidente	December 7, 1910

Subsequently, in order to reduce the cost of operations, the following ships were converted into oil burners, making eight oil-burning ships in all, viz.:

"El Sud," "El Alba," "El Mundo," "El Oriente," "El Valle," "El Norte," "El Sol," and "El Occidente."

In 1912, it became necessary to build a tank steamer in order to transport oil from the Mexican fields to tanks at Galveston and Algiers, both for the steamship as well as the rail lines, and the tank ship Topila, with a capacity of 50,000 barrels of crude oil, was placed in commission in June, 1913. She was followed in 1917 by another tank steamer, the "Torres," of the same carrying capacity.

In 1916, before the U. S. Government entered into the World War, it was found necessary to further increase the cargo capacity of the fleet, and to meet these requirements the steamships "El Almirante and "El Capitan," were constructed with a cargo capacity of 6,500 tons each. They were especially designed for the handling of slow moving freight, and for this purpose their speed was limited to twelve knots.

Anticipating the retirement of the steamships "El Paso," built in 1886, the "El Monte," and "El Mar," built in 1889, because of their age, small carrying capacity, and obsolete type, making them expensive to operate, contract was let in December, 1919, for the construction of three freight steamers with a deadweight capacity of 4,000 tons each, which were named and placed in commission in the following order:

El Estero	November 24, 1920
El Isle	January 18, 1921
El Lago	March 8, 1921

The use of fuel oil by the rail and steamship lines, which will be still further increased by the contemplated conversion of other ships into oil-burners, made it necessary to provide additional facilities

for the transportation of oil from the Mexican fields, and to meet this demand, contract was placed in March, 1920, for another tank ship with a deadweight capacity of 16,340 tons, capable of transporting 100,000 barrels of crude oil. This vessel, the "Tamiahua," was completed and placed in commission September 29, 1921.

GEO. R. BURROWS, Inc.

IT IS with a great deal of pleasure that we have noted the rise to prominence enjoyed by the firm of Geo. R. Burrows, Inc. Although only a young firm in the sail-making business, it has been built up by men who were born and raised in the old school. There is an old saying that all things worth while build slowly, and when we consider new ideas applied by men imbued with old time principles, there is assurance of success, and the prestige gained is lasting.

Time was when the jib-booms of the famous clipper ships crossed the street almost to the windows of buildings on the other side. Time was when there were more than two suits to a clipper ship with their thirty-two sails. Time was when machines were unheard of and the square rigger would tug and pull on her hawsers for days patiently waiting while a score of men were hurrying to finish the new suit, that the ship might sail to the shores beyond.

Reminiscence has its place, but we have all realized at one time or another, the value of experience, and when today a problem is approached, that priceless experience, gained through the years, shows us how the new ideas are based on fundamental principles born of the time before us.

It is surprising, when we consider that today there is more canvas on a battleship than on the old square rigger. Over one thousand hammocks must be supplied the men; the decks fore and aft must be covered with awnings; the dynamos, boats and guns must be covered and screened.

What the future brings, none can tell; we are sincere when we wish Geo. R. Burrows, Inc., the full measure of prosperity due them, and as time rolls on, let us not forget that old saying which will always ring out for time everlasting.

"Where there's wind and water, there'll be sail."

GENERAL ELECTRIC COMPANY'S ACTIVITIES IN THE MARINE FIELD

THE GENERAL ELECTRIC COMPANY was incorporated in 1892, acquiring at its formation all the capital stock of the Edison General Electric Company, of the Thomson-Huston Electric Company, and of the Thomson-Houston International Electric Company. The previous twelve years in the history of electrical industries was an era of invention and preparation; incandescent and arc lighting and electric traction were growing arts, but were so clouded and delayed up to 1892 by the clash of divergent methods, that only a few realized their vast future utility.

The General Electric Company started its activities in the marine field about twenty-five years ago with the manufacture of Steam Engine-Driven Generating Sets which were used for lighting purposes. These sets have been installed in the ships of the United States Navy, in the Russian, Japanese, Brazilian, Cuban and other foreign navies. The ships built for the Emergency Fleet Corporation by the American International Shipbuilding Corporation at Hog Island are fitted exclusively with G-E Steam Engine-Driven Generating Sets, as are numerous other merchant ships.

In the last few years rapid strides have been made by the Company in the development of main propulsion as well as auxiliary apparatus for ships.

A large number of G-E Marine Geared Turbines have been built for, and are installed in various types of vessels of the U. S. Navy, such as scout cruisers, destroyers, torpedo boats, etc.

The Company was the first in the world to build electric ship propulsion machinery for a naval vessel with the 5,800 h.p. set installed in the U. S. Collier "Jupiter," now the airplane carrier "Langley."

This type of drive was then adopted by the Navy for all the capital ships so that the Company has now installed or under construction turbine-electric propulsion machinery for the U. S. Navy aggregating 957,800 h.p.

Following the example of the U. S. Navy, the Japanese Navy is installing in the latest 14,000 ton fuel ship G-E 8,000 h.p. turbine-electro propulsion machinery.

The first American Marine Geared Turbine, *i.e.*, a high-speed turbine driving the propeller through a double reduction gear was manufactured by the Company and installed in 1915 in the S. S. "Pacific." Thirteen additional units were built shortly afterwards and installed in merchant ships.

When the United States entered the Great War, it was recognized that the effectiveness of our armies would depend on how rap-

idly merchant ships could be built and equipped. At this time the only double reduction Marine Geared Turbines in actual service were the fourteen units built by the General Electric Company. An order for a large number of Marine Geared propulsion units was placed with the Company. To fulfill the requirements for early delivery, the General Electric Company's facilities for manufacturing Marine Geared Turbines were increased, and special tools and equipment was procured. Delivery was made by the Company at the rate of one complete Marine Geared Turbine unit per day. Over three hundred units were thus installed in merchant ships. The great speed at which these units were manufactured by the Company and the actual service rendered to the Government during the hostilities is clearly demonstrated by the fact that G-E equipped ships rendered more than four-fifths of the total service given by vessels propelled by double reduction geared turbines.

When the demands of the United States Shipping Board for additional propulsion machinery became more insistent, the Company, prompted by the success attending turbine-electric drive on the collier "Jupiter" and the Battleship "New Mexico," offered to build turbine-electric propulsion machinery for merchant ships. Up to date five Shipping Board ships have thus been equipped:

S. S. Eclipse, S. S. Invincible, S. S. Archer, S. S. Independence, and S. S. Victorious.

Seven more equipments are practically completed and will be installed in similar ships.

Similar equipments have been installed on the express passenger and freight ships, S. S. Cuba, and the four latest U. S. Coast Guard Cutters, the U. S. S. Tampa, Haida, Mojave, and Modoc.

An equipment of this kind consists of a high-speed turbine direct-connected to an alternating-current generator which delivers current to an alternating-current propulsion motor. This motor is directly coupled to the propeller shaft. All maneuvering is done from one central station, the control panel, on which are mounted all instruments and maneuvering levers.

These equipments are the first of its kind to be installed in American merchant ships.

The Company was the first to successfully apply the Diesel engine-electric system of propulsion to merchant ships. In February, 1920, the 500 ton fishing trawler "Mariner" of Gloucester, Mass., propelled by 400 h.p. Diesel engine-electric machinery, went into service. The reliability and efficiency of this kind of drive has proved itself and will be further demonstrated by the world's first Diesel engine-electric cargo ship the 2,000 M. S. Fordonian,

equipped with 850 h.p. Diesel engine-electric propulsion machinery. The General Electric Company furnished the electrical equipment for both installations.

The efforts of the Company have not been confined to the development and perfection of propulsion machinery only. Realizing the advantages to be gained from electrification of the ship's auxiliaries, a complete line of electric appliances have been built especially for merchant marine service. This comprises generators and switchboards for auxiliary power, motors and control for deck and engine room auxiliaries, for fans, refrigerating machines, etc., are welding sets, air compressors, radio apparatus, searchlights, lamps and lighting fixtures, galley appliances, etc.; in short, every auxiliary apparatus found on board ship.

To fulfill the demands for properly trained and competent engineers to take charge of the ship's machinery, the General Electric Company established a School of Marine Engineering at Schenectady. Two courses were conducted, one on Marine Geared Turbines and the other on Electric Propulsion Machinery. Up to date approximately 1,200 marine engineers have been trained, comprising naval officers, port engineers, U. S. Shipping Board engineers, engineers of private steamship companies, construction foremen from shipyards and repair yards, engineer graduates of state nautical school ships, etc.

UNITED STATES LLOYDS, Inc.

THE UNITED STATES "LLOYDS" was the first organization to conduct, in the United States, the business of marine insurance on the plan of individual underwriting as at Lloyds, London.

Organized in 1872 with a list of one hundred subscribers or underwriters composed of many of the foremost bankers and merchants of that time it has taken a prominent position in the insurance world for nearly fifty years past, and included in its managers during that period are the names of James F. Cox, A. Foster Higgins, John D. Barrett, Herbert Appleton and Douglas F. Cox.

In 1918 the organization was incorporated as a stock company to do marine and fire insurance, and is now known as United States Lloyds, Inc., under the management of Appleton & Cox, Inc.

Always enjoying the confidence and patronage of the insuring public, it has paid losses of over $30,000,000 to its policy holders.

LLOYD SABAUDO
SOCIETÀ ANONIMA PER AZIONI
Fast Italian Mail Line

THE LLOYD SABAUDO STEAMSHIP COMPANY—whose Home Offices are in Genoa—was organized in Turin, Italy, on June 21, 1906, with a fully paid up capital of Lit. 15,000,000 which has from time to time been increased to Lit. 60,000,000.

On April 4, 1907, the newly formed Company celebrated the inauguration of its services with a reception on board the S. S. "Re d'Italia," at which there were present government, municipal and maritime authorities and church dignitaries, and on the 7th of the same month this steamer left Genoa on its maiden trip to New York.

There followed other steamers, such as the "Regina d'Italia," "Principe di Piemonte," "Principe di Udine" and "Tommaso di Savoia," the latter two having been assigned to South American trade.

In 1914 the Company sold the "Principe di Piemonte" and purchased thirteen freight units, which performed very important work during the World Conflict, in connection with the provisioning for the account of the Italian Government.

In the performance of their duty, two among the Company's best steamers—the "Valdieri" and the "Capodimonte" were sunk, but these were soon replaced by two others, bearing names similar to those lost.

Another great step towards the complete development of the Lloyd Sabaudo's program is represented by the construction of the de luxe turbine quadruple screw steamer "Conte Rosso," the largest, fastest and most beautiful Italian steamer afloat. This steamer, which will make its maiden trip to New York early in 1922 has a displacement of 21.000 tons, a speed of 20 knots per hour and will be able to make trips between Italian ports and New York in less than nine days, thus establishing a record among the steamers at present plying in this trade.

Moreover, the Lloyd Sabaudo has at present at a well advanced stage of construction a sister ship of the "Conte Rosso," the "Conte Verde," which possesses the same characteristics, that will make these two steamers the most popular in the Italian-North American trade.

Besides the above, the Lloyd Sabaudo participated in the formation of the Italian "Cantieri Navali F. Tosi" in whose shipyards at Taranto the freight steamers "Castelporziano" and "Valdieri" were constructed, and wherein two other freight units of 12,000 tons each are now being built.

The Italian freight line "La Polare" is also under the full control of this Company since 1918, and the total displacement of the passenger and freight steamers of the Lloyd Sabaudo now reach about 200,000 tons.

The activities of the Lloyd Sabaudo, however, were not only confined to the commercial field, for in the occurrence of the earthquake at Messina, in December, 1908, its steamers were sent to the stricken zone for the purpose of lending any aid that may have been required of them, while during the entire period of the Italian-Turkish War in Tripoli, both the S. S. "Re d'Italia" and "Regina d'Italia" were assigned to hospital duty, which they performed uninterruptedly for two years.

These two steamers were also utilized to a very good advantage during the World War, serving in multiple purposes, to wit: hospital ships; transporting allied troops to and from the war zone and the American troops, cattle, provisions and ammunitions from the United States to France and returning of the American troops; the Saloniki campaign and many other valuable services.

As new steamers were added to those owned by the Lloyd Sabaudo, new services were established in addition to the original North and South American lines, and the ships of the Lloyd Sabaudo now touch also ports on the Black Sea, North Europe and Australia.

A note worthy of interest is the fact that the president of the Lloyd Sabaudo is one of the greatest scientists of all times, Guglielmo Marconi.

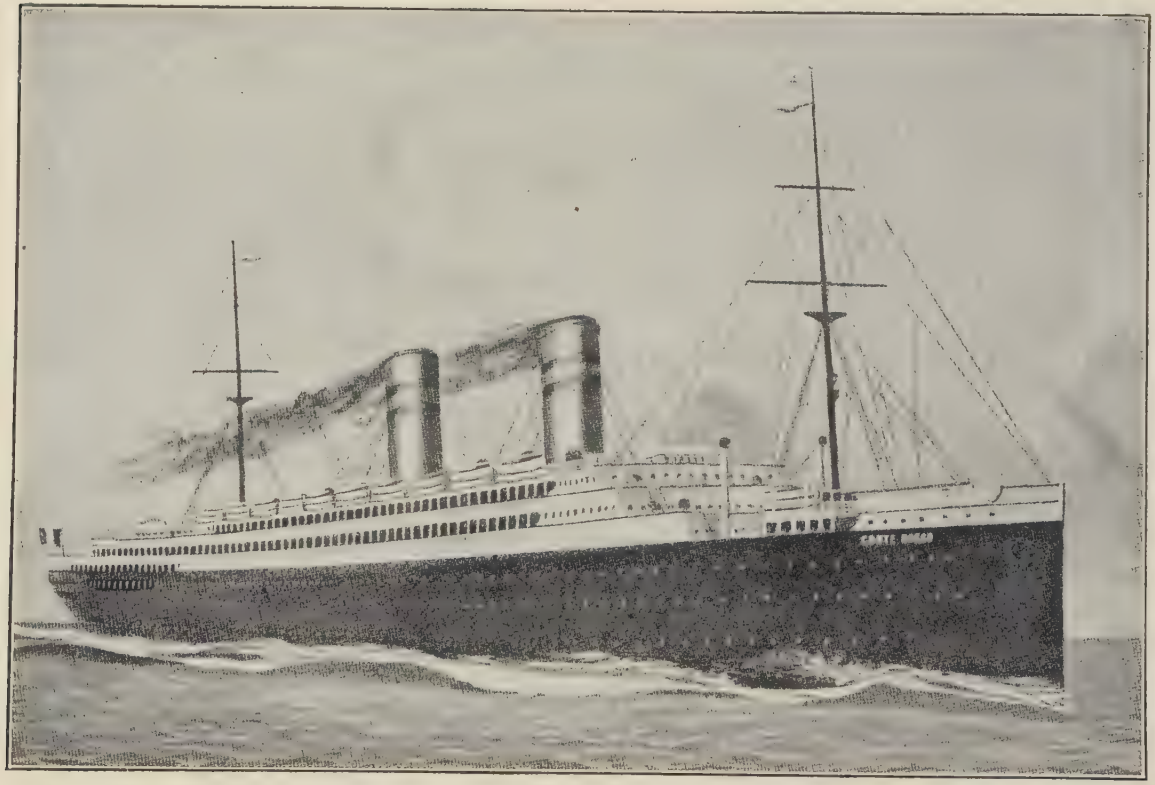
PEIRCE BROTHERS, Inc.

THE PEIRCE LINE is one of the very oldest Italian Steamship Companies in service from Mediterranean to U. S. Ports. The "Sicula Americana" "Società di Navigazione ed Imprese Maritime, with head office in Naples, is a Steamship Line which has had a regular passenger and freight service between Italy and the United States since 1907.

Grande Ufficiale Giorgio W. Peirce is the owner of these two Lines. Peirce Brothers, Inc., of No. 17 Battery Place, New York City, with long experience as steamship people, are the General Agents for these two lines, besides handling other tonnage.

Peirce Brothers, Inc., also engage in purchasing very large quantities of American coal for export to the various organizations of Peirce Brothers throughout Italy.

The managing director of the New York office is Cavalier Louis Costa.



S. S. CONTE ROSSO OF THE LLOYD SABOUDA S. S. CO.

The largest and fastest Italian steamer afloat

W. R. GRACE & CO.

W. R. GRACE & CO., whose activity extends over seventy years of remarkable history, covering nearly every phase of trading, transportation, banking, and merchandising, began its development in the adventurous determination of William Russell Grace, who was born in Queenstown, County Cork, Ireland, May 10, 1832. He came to New York at the age of fourteen and then, returning to Ireland, found his way to Peru, where in Callao he became a clerk in the employ of John Bryce. The latter ran a ship chandler's business and general store. It was during these times that guano was shipped from the islands off the Peruvian sea coast to all parts of the world, and W. R. Grace was sent by his employer to the Chincha Islands to supervise the loading of ships there. It was at Mr. Grace's suggestion that the "Down East" ship builders increased the size of their ships, as it took very little longer to load a ship of 4,000 tons than one of 2,500.

After twenty years in Peru, during which time Grace branch houses were established in Lima, Callao, Valparaiso, San Francisco, Santiago and Concepcion, W. R. Grace came to New York, and the New York house was established in 1868. He was elected mayor of New York in 1880 and again in 1884. Throughout his life W. R. Grace was prominent in banking, shipping and trade enterprises, touching all his ventures with the wand of success.

During the financial troubles of Peru, when, between 1865 and 1871, Peru had contracted a debt amounting with interest to $200,000,000, the Grace firm played an important rôle. In 1889 this firm of only a generation's growth took upon its shoulders the national debt of Peru of $250,000,000 in payment of which it contracted to develop the railroads, mineral, chemical, guano and other resources of the country.

In the early days when sailing ships were supreme, it was the practice of the house to charter ships and send them on the long voyage around the southern end of South America and up the West Coast to Chile and Peru where they would load cargoes of guano and nitrate of soda and other products of the West Coast and bring them back to New York. To make the trip to San Francisco via Punta Arenas required as much as 110 days. These ships carried to Peru and Chile mostly kerosene and naval stores, together with agricultural implements.

It was in the nineties that the first steam vessel was put in service by the firm, and this marks the beginning of the Grace Line. The first steamers were built in England; later on the fleet

was made larger by ships built in American shipyards. From the nineties until February, 1918, the line operated only freight vessels, but on February 2, 1918, the Santa Ana sailed on her maiden voyage to the West Coast being the first American passenger liner in that service. Later the Santa Luisa, Santa Teresa and Santa Elisa were put on the run in the order named, and today they are the only American passenger ships running to the West Coast of South America from New York.

Today the Grace House has its branches in all parts of the world. There are branch houses all over the United States, Canada, Central America, the West Indies, South America, Europe, Asia and Africa.

JOHN ANDERSON BENSEL

MR. BENSEL was born in New York, 1863, and was graduated from Stevens Institute of Technology in 1884. He was a rodman employed on the New York Aqueduct and later Assistant Engineer and Assistant Supervisor in charge of improvement of Dock and Freight Terminals for the Pennsylvania Railroad. Was Assistant Engineer of the Department of Docks, New York City, in charge of construction work on the North River waterfront from 1889 to 1895, Engineer for waterfront improvements for the Central Railroad of New Jersey, the Girard Estate of Philadelphia and the city of Philadelphia in improvements of a mile of waterfront on the Delaware River. Was Engineer-in-Chief, Department of Docks, City of New York, 1898 to 1906; Commissioner of Docks, 1906 to 1908; president of the Board of Water Supply constructing the new Catskill System, 1908 to 1911, and State Engineer of the State of New York, 1911 to 1915, employed on the construction of the Barge Canal, traversing the State. At present time is consulting engineer for various municipalities in the State of New York and consulting engineer on the tunnel now under way connecting the States of New York and New Jersey under the Hudson River. Was President of the American Society of Civil Engineers, 1910, and is now a member of this society and of the American Society of Mechanical Engineers, the Institute of Mining Engineers, and the Institution of Civil Engineers of Great Britain. He was Major of Engineers, Army of the United States, in the recent war, commanding the 125th Engineers Batallion.

Mr. Bensel maintains a suite of offices at 18 East 41st Street.

THE PERSHING SQUARE HOTELS

HAS anyone ever stopped to consider the value of the hotel to the Port of New York?

The character of the big caravansary of the metropolis is one of the best indices of the city's life, and plays a part in its existence to which, apparently, little attention is given by the general public.

But this is not so with the observing. While there is no doubt that the hotels expand with the growth of a city, it is the hotel which takes the initiative. The modern caravansary is built to meet the needs of the city ten or twenty years ahead of its construction, and improvements follow in the building line with which the city never does catch up.

The hotel advertises itself and the city all over the country—all over the world, and more than anything aids in putting it on the map. Its reputation inspires travel from the interior and from abroad. It brings distinguished people to the country's metropolis, persons of all branches of learning and professions and trades, great architects and builders, men of science and skill of all kinds, scholars and artisans, merchants, shipping men, captains of industry, nobles, kings and queens and capital.

All of this means the building of bigger and better ships, and the reputation of the metropolis and the country behind it spreads to the masses, and they crowd like flies around the sugar bowl and pour out of Europe to reach the Mecca of Opportunity. More ships have to be built for their accommodation, more docks must be provided to accommodate the ships, more men employed to take care of the piers and handle the ships with their crowds of humanity and tons of freight.

Tugs and barges follow in the wake of the ships and ferryboats must be built to care for the increasing travellers and shipments from the interior.

The hotel is the way station for the traveller going abroad, and the better the accommodations of the hotel, the better must be the accommodations on shipboard, and the comparison has had much to do with the construction of the floating palaces now plying the Atlantic Ocean.

Persons coming to New York and not going abroad demand entertainment, and usually want the sort which the hometown fails to provide. Here again the hotel helps the Port of New York, for the hotel guests want to sail up the river, or a spin about the bay, or a short turn out in the ocean. The demand has resulted in the building and operation of fleets of pleasure craft which in the summer season help swell the receipts of the port.

The Pershing Square group of hotels, of which John McE. Bowman is the president, are the finest and most modern in the world. Thousands, yes, hundreds of thousands of men, women and children are registered in these hotels during the year. They include the Biltmore, Commodore, Belmont and Murray Hill, also the Ansonia, on the upper west side of Manhattan Island.

The Pershing Square group of hotels are of vital importance to the City of New York. They are just as necessary as gas, water and electricity. From the day these hotels first opened, it has been possible for the traveller to live like a prince and dine like an epicure. The system of hotel organization devised by Mr. Bowman, is the most marvelous development of its kind in the industry. It is a unit in type, management and organization. It is more than a unit—it is even complex in its manifold application and geographical extension of its activities. It is today the greatest hotel system in the world.

The hotel industry occupies a field of its own, and the slightest flaw in its workings is sufficient to bring one of its structures down with a crash. In the conduct of a big hotel efficiency is a finely spun thread of experience, knowledge and perfect organization. The hotel has more ramifications than any other branch of industry; there are more corners to cover, more leaks to watch, more trades to come in contact with, and more varieties of human nature to deal with.

One has to think in hundreds of thousands when it comes to numbering the visitors registering at the six hotels in the course of one year. The count actually equals the combined populations of Everett, Wash.; Lewiston, Me.; Beaumont, Tex.; Lima, Ohio; Cedar Rapids, Ia.; Charlotte, N. C.; Joliet, Ill.; Muncie, Ind.; Lexington, Ky.; Shreveport, La.; Fargo, N. D.; Colorado Springs, Colo.; Pine Bluff, Ark.; Selma, Ala.; Madison, Wis.; Emporia, Kas.; Battle Creek, Mich.; Talahassee, Fla.; Alexandria, Va.; Columbia, S. C.; and Columbia, Mo. More than 613,800 guests register annually in these hotels, and other visitors each year number over 3,384,000. The total number of visitors is more than the population of the first 84 American cities announced by the census reports for 1920.

To manufacture the stock of china in constant use in these hotels would require the year's output of a good-sized factory, for 555,129 pieces are carried on the pantry shelves. Some idea of the enormous breakage may be obtained from the fact that in twelve months, 169,229 pieces have to be replaced. Of silverware 244,893 pieces are in use. Were the year's wash spread out to dry on roofs,

the sheets and pillow cases alone would cover every roof on Manhattan Island, while the table-cloths would need most of those between the East River and Flatbush. The laundries turn out annually over 36,000,000 pieces of bed linen and 17,305,000 of table linen.

In the 6,000,000 pieces of mail that are received and distributed annually arrive everything from letters to live animals. Early vegetables from Florida and California, and tropical fruits are not uncommon. Even alligators have been received, and one parcel contained fourteen live rabbits.

It would take a good-sized book to tell the many interesting things that happen in the Pershing Square group of hotels. They are a vital necessity to the Port of New York, in fact, just as necessary as the port is to the City of New York. Outside of New York the group includes the Griswold, at New London, Conn.; the Belleview, at Belleair Heights, Fla.; the Sevilla, at Havana; and the Westchester Biltmore now building, at Rye, N. Y.; also the Providence Biltmore, a new and very wonderful hotel, at Providence, R. I.

COLUMBIA BRONZE CORPORATION

THIS organization manufactures bronze propellers for steamships and smaller boats. The plant is located at Freeport, Long Island, New York, within twenty-five (25) miles of New York City, and is the nearest bronze foundry equipped for the manufacture of propellers and other heavy manganese bronze castings to the port of New York.

The business was originally organized in 1871 as the Columbian Brass Foundry, near the water front in Brooklyn, and was moved to Freeport and started the manufacture of bronze propellers in 1905. Since 1908 the growth of the business has been steady and substantial, and in the year 1920 it is believed that a larger number of bronze blades for built-up steamship propellers were cast in this plant than any other plant in the world, some 600 blades and about 60 complete built-up propellers having been manufactured there.

The active officers are: Louis J. Hall, President; Wilbur H. Young, Vice-President; Robert A. Patrick, Secretary. The New York office is located at 522 Fifth Avenue.

THE TIDE WATER OIL COMPANY

FORTY-THREE years ago all the crude petroleum that was refined at the seaboard was transported from the Western Pennsylvania oil fields in small wooden barrels or in two or three small upright wooden tanks loaded on a flat car.

In 1878 three men with the courage of their convictions formed the Tide Water Pipe Company, Limited, for the purpose of transporting petroleum to the refineries on the seaboard, and started the construction of a pipe line from the Bradford oil field to Williamsport, Pennsylvania.

By June, 1879, the line was completed to Williamsport, and oil transshipped by rail to New York and Philadelphia. But all the problems were not solved. The competitive freight rate from the oil regions that had been $1.60 per barrel was reduced to 20c, and as though this were not enough, a rival company bought up all but one of the refinery customers for crude oil. This sole refinery was located at Sixty-sixth Street, New York City, and had been condemned by the New York Central Railroad Company and forced to move. This commercial blow would have staggered most men and driven the company into bankruptcy; but the projectors had faith in the enterprise and the financiers believed in the men. Soon two great refineries were under way at Chester, Pennsylvania, and Bayonne, New Jersey, and later the pipe line was extended to Bayonne.

In 1888 the Tide Water Oil Company was organized, taking over all the Tide Water interests in the East, and consolidating its refineries into one large plant at Bayonne.

From the beginning the management took great pride in the quality and uniformity of its products, and bent every energy toward making its output the best that could be produced. To-day its trade-marked brands of Veedol lubricants and Tydol gasoline are as much a standard of quality to the users of automobiles as are its brands of kerosene to the inhabitants of the Far East.

Where originally there was one Tide Water corporation engaged in one phase of the petroleum business, to-day there are fifteen companies, all busily specializing in some feature of producing, transporting, refining and marketing petroleum.

A large factor in the success of the Tide Water Oil Company has been the faithful and untiring work of its old and experienced men—personal ownership of the business could not have done more. A record of one hundred and ninety-seven men who have served continuously for twenty-five years or more is a record of which to be proud, and the Company regards them as one of its greatest assets.

W. & A. FLETCHER COMPANY

ON THE Jersey side of the Hudson River almost directly opposite the spot where, a little more than a century ago, Robert Fulton started the "Clermont" on its first voyage there is situated one of the most complete and best equipped ship building and repair yards on the Atlantic coast. In this plant notable records have been made, unusual feats of construction have been accomplished, experiments and developments have been carried out which have attracted the attention of the shipping fraternity, intensified the atmosphere of romance around the shipbuilding industry in this country, and sustained the historic interest attaching to that part of the Hudson since the launching of the world's first steamboat. A crowd of people, some confident and some skeptical, lined the shores of the river on that momentous occasion to watch an event which was the beginning of a revolution in the method of propulsion of ships. On the identical spot where many of these spectators stood, there now exists a plant supplied with machinery and appliances never dreamed of by Fulton, manned by a highly efficient organization which has upheld the tradition of that notable achievement and performed work which has been comparatively of as great a significance as the launching of the Clermont.

The plant is that of the W. & A. Fletcher Company, whose nameplate is written largely upon the very foundations of our industry of marine construction and engineering. Sixty-eight years ago the company was formed and a small shop opened in West Street, New York. The space at the disposal of the venturers into the new business was very limited, but despite this handicap the plant was well supplied with the necessary equipment, and work proceeded apace. Contracts began to come in, and in an incredibly short time the Fletcher name was famous.

The quarters on West Street, however, were soon taxed up to their full capacity, and it was found that if the company was to cope with the demands that were being made upon it a much larger plant would have to be built. Accordingly, in 1890, a site was acquired in Hoboken, where the present yard now occupies over two blocks of waterfront property on Hudson Street. There is nothing prosaic about the plant or its organization, for a survey of its achievements may be interpreted as one of the most graphic chapters in the history of the growth of shipbuilding in America. If the fleet of vessels of all descriptions—river, sound and lake steamers, ferryboats, tugs and lighters—which have been equipped wholly or in part by the Fletcher Company could be gathered together, they would furnish the most perfect illustration of progress of the art of shipbuild-

DRY DOCK NUMBER ONE

At the Hoboken Plant of the W. & A. Fletcher Company

ing during the last half century, and would show clearly the various stages through which ships have passed in their development from the crude vessel of Fulton to the modern floating palaces.

From its very inception the Fletcher Company has been closely identified with this development. Its officials have devoted special attention, however, to the perfecting of the marine engine, and have contributed in no small measure to the present efficiency of steam propulsion for vessels. The company's fame for the construction of the beam engine is world wide, and it is interesting to note that even at the present time, when this type of prime mover is so rarely used, they still use as their cable address "Beamengine."

Success followed success in their engineering experiments, and with a prophetic eye to the future possibilities of the use of the steam turbine in ships, the heads of the firm carried out elaborate plans for its perfection. Their dream materialized in 1906 when they built and equipped the "Governor Cobb," which was the first turbine driven ship to be turned out in an American yard. Not content with this triumph they carried their efforts still further and in the following year completed the "Yale" and "Harvard," which hold the record for speed among the passenger and freight ships engaged in commercial work in this country.

The present plant has been carefully and conservatively developed. Concrete roads connect the various shops with the piers and dry docks, and a standard guage track is laid along the roads and extended down the three piers. This track permits of the use of locomotive cranes and enables freight from the Hoboken Shore Railroad with which the track is directly connected to be quickly transported.

About a year ago a new floating dry dock was put in commission; this is of the 8,500-ton design with wooden pontoons and steel wings, measures 440 feet on the keel blocks, and has a draught at low water of 25 feet.

Until the last eight years the Fletcher Company confined its activities towards the building of new vessels, and during that period was identified with the production of more than three hundred vessels of every type from the sturdy harbor tug to the swift, splendid passenger vessels that ply our seas and rivers.

The organization of skilled workmen with which the company has surrounded itself constitutes a unique phase in the history of the company. The advantages of the apprenticeship system were early realized, and the present staff has been built up from the boys who joined the company to learn their respective trades. The effectiveness of this system is reflected in the rapidity and thoroughness with which contracts are completed.

The Fletcher Company's activities are now carried on by the sons and grandsons of the original firm, Andrew Fletcher being president and treasurer, H. M. Fletcher, vice-president, and Andrew Fletcher, Jr., secretary.

THE DELAWARE, LACKAWANNA & WESTERN RAILROAD CO.

EVERY railroad with terminals in New York Harbor is of necessity required to identify itself more or less with the marine activities of the Port. Many of them operate great fleets of tugboats, lighters and barges to facilitate the movement of their tonnage. Of these the Delaware, Lackawanna & Western R. R. Company has perhaps as complete a marine organization as any, which is operated under the competent management of John M. Emery with headquarters in Hoboken.

In 1903 the Lackawanna purchased the Hoboken Ferry property, the equipment consisting of 13 boats, with 3 ferries operating between New York and Hoboken. Five of these boats have since been sold and one lost by fire but 7 double deck steel boats have been added to the fleet at a cost of about $1,500,000.

The Company now owns 15 ferry boats with a registered tonnage of 17,791 tons, equipped with the most modern devices for safety and comfort, operating 4 ferry lines from Hoboken.

The Company took over the lighterage business in October, 1904, purchasing the equipment from a company who had done the work for them under contract. The equipment at that time consisted of 7 tugboats, 4 steam lighters, 10 open lighters, 13 covered barges and 12 car floats—a total of 46 boats.

The present lighterage division fleet consists of 197 boats, an increase of 151, as follows:

18 tugboats, tonnage 3,544; 5 steam lighters, tonnage, 1,937; 64 covered barges, tonnage 25,035; 45 derrick lighters, tonnage 21,450; 30 car floats with a carrying capacity of 365 cars; 35 grain boats, with a carrying capacity of 1,000,000 bushels; and 30 harbor coal boats with a capacity of 10,800 tons.

For a number of years prior to 1916 the Company operated a fleet of sea-going barges with a carrying capacity of 24,750 tons, handled by two sea-going tugs with a gross tonnage of 640 tons. This entire fleet, however, was sold in 1916.

THE MUNSON STEAMSHIP LINE

THE Munson Steamship Line was originally started in 1872 by Walter D. Munson by the operation of sailing vessels between the United States north Atlantic ports and Havana, Cuba. Later, as the business of the Company extended, chartering of steam vessels for the carrying of bulk cargoes of coal, oil, sugar and molasses was engaged in. The carrying of general cargo from New York to Cuban ports was begun in 1876, sailing vessels being operated in this service.

During the years of 1914, 1915, and 1916, due to the foresight of Mr. Frank C. Munson, the Munson Steamship Line had built for its use 12 American steamers of the most modern and up-to-date design, making a total of 18 steamers which it now owns.

The business of the Company was incorporated under the name of the Munson Steamship Line early in 1899. The Company has always been 100% American owned, all of its capital being held by American citizens.

Mr. Frank C. Munson, son of the founder of the business and President of the Munson Steamship Line, is a typically energetic American business man who devotes himself unceasingly to making a success of anything he undertakes. It is to his untiring efforts and indefatigable zeal that the great steamship line owes the wonderful development and popularity which it has now attained, and to which the new steamers and the new office building are a fitting monument.

The presidents of the Munson Steamship Line have been: Walter D. Munson, its founder; Carlos W. Munson and Frank C. Munson, sons of Walter D. Munson. The other officers of the Company who have ably assisted in the advancement of the interests of the Line are: Alfred H. Bromwell, Vice-President; Charles M. Dimm, Treasurer; John W. Reynolds, Secretary. And heads of departments who have long been with the Company and have worked up from the bottom, are: Captain Asmus Leonhard, General Superintendent for Cuba; Chester B. Kellogg, Freight Traffic Manager; Frank M. Kellogg, Manager Sugar Department; Leonard Brooks, Auditor; Frank C. Osborn, Manager Ownership Operations Department; Sinclair Graham, Manager Purchasing Department; George G. McIntosh, Passenger Traffic Manager; R. A. Breese, Jr., New York Port Manager; Kenneth E. Knowles, Manager South American Department.

RADIO CORPORATION of AMERICA

THE RADIO CORPORATION OF AMERICA was organized on October 17, 1919, at which time the radio interests of the Marconi Wireless Telegraph Company of America and the General Electric Company were merged into one Corporation.

"Via RCA" is an abbreviation of the words—"Via Radio Corporation of America." The meaning goes further, however, for this Corporation is the result of over twenty years of pioneer work in the direct application of radio to the service of mankind. It is a strictly American organization, owned and controlled by Americans, and its world-wide activities in the art of trans-oceanic and marine communication are planned for the best interests of American Commerce.

Back of the Radio Corporation of America stand the splendid research facilities of its associates in the field of electricity; the General Electric Company, the American Telephone and Telegraph Company and the Western Electric Company. These famous companies are partners in the World Wide Wireless program of the Radio Corporation of America. To this end is lent every electrical development which can be advantageously applied to modern radio practice.

It is for this reason, therefore, that the "radio way" has so prominently attained the three essentials of international communication: accuracy, speed and economy.

Today, the RCA system maintains direct wireless service with Great Britain, France, Germany, Scandinavia, Japan and Hawaii. In addition, plans are in progress for an extensive service between the United States and South America and between South America and Europe.

Radio communication is now a highly effective and practical business aid. Radiograms are being exchanged daily between the United States and foreign countries and between ships of all nations in ever increasing numbers, and American, European and Far Eastern business interests have come to appreciate the excellent service which this modern method of international and marine communication offers.

The Radio Corporation is not only the pioneer in continent to continent radio service but in ship-to-ship and ship-to-shore radio communication as well. To this end there has been established by the Radio Corporation of America at various points of both the Atlantic and Pacific Coasts radio stations which incorporate the last word in marine wireless service. Thousands of vessels are therefore in a position to secure instantaneous communication to and from the United States when at sea.

ELLERMAN'S WILSON LINE, Ltd.

HEAD office of the Company is in Hull, England, and the Company's Fleet, prior to the War, consisted of eighty-eight (88) 100-A British vessels, forty (40) of which were sunk by submarines and mines, including many first class passenger carriers; and twenty (20) new steamers with all modern improvements for carrying freight and passengers have been added to the fleet since the end of the war; and eleven (11) more are building at the present time.

The New York-Hull service was started over forty years ago and now has developed to the present high state of efficiency, with regular sailings from New York.

The Wilson Line steamers "Francisco," "Marengo," "Galileo," "Toronto," and "Idaho" compare equally with the finest freight vessels now crossing the Atlantic.

The Wilson Line was founded by Charles Henry and Arthur Wilson. Charles Henry Wilson afterward became Lord Nunburnholme. The Line was bought in 1915 by Sir John R. Ellerman, Bart, who now controls the Company.

Up to last April, representation of Ellerman's Wilson Line Limited, at New York, was in the hands of Sanderson & Son, but on April 1, 1921, Sir John R. Ellerman opened his own office in New York under the name of Ellerman's Wilson Line New York Incorporated, who are situated at 18 Broadway, and are now carrying on the operation of the Hull steamers.

The New York Office also operates the well-known Phoenix Line, between New York and Antwerp, Belgium; and likewise are joint Agents with Messrs. Norton, Lilly & Co., in operating the American Mediterranean Levant Line steamers to Levant and Black Sea ports.

C. B. RICHARD & CO.

THE firm of C. B. Richard & Co., of No. 29 Broadway, New York, was established on May 1, 1847, and is probably the oldest shipping concern in the United States. Oscar L. Richard, together with Leonard W. Simmons, Albert F. Egelhoff and George N. Richard, son of the senior member, now constitute the firm.

For more than 40 years—until 1891—they acted as agents of the Hamburg American Line; since then they have represented the Uranium Line to Rotterdam, Prince Line to the Mediterranean, Russian Volunteer Fleet to Libau, Lloyd Italiano to Italy, Ottoman-America Line to the Orient and the Polish Line to Danzig.

They also operated their own steamers and sailing vessels, and steamers of the U. S. Shipping Board as well.

NEW PIERS OF ELLERMAN'S WILSON LINE

At Hoboken, N. J.

MARINE DEPARTMENT OF THE NEW YORK CENTRAL RAILROAD

THE history of the development of the Marine Department of the New York Central Railroad shows that the managements of the company, from its earliest operations, recognized the need of an adequate local harbor service in connection with the handling of the traffic of New York City.

Prior to May 1, 1881, the railroad's lighterage work was done under contract, the late John H. Starin having been the last to render service under this arrangement.

While the marine equipment needed in New York harbor during the New York Central's early operations was limited and would make a poor showing alongside the splendid equipment now in use, it was nevertheless adequate to handle the business efficiently at all times.

The New York Central began doing its own lighterage work in New York harbor on May 1, 1881, when the New York Central Lighterage Company, with Charles A. Pool & Co., managers, was organized to handle the business. This arrangement continued until January 1, 1890, when Gibson L. Douglas succeeded Charles A. Pool & Co. Mr. Douglas resigned in the spring of 1897 to become vice-president of the West Transit Company, the New York Central's line of steamers plying the Great Lakes.

Alfred K. Skitt succeeded Mr. Douglas and on November 23, 1898, he was succeeded by Walter B. Pollock, who is still in charge of the department.

Shortly after Mr. Pollock's appointment the name of New York Central Lighterage Company was abolished and ever since then this branch of the railroad's service has been known as the Marine Department of the New York Central Railroad.

The greatest growth in the railroad's Marine Department has been during the last twenty years. Among the first important changes made after Mr. Pollock became manager was the transfer of the operation of the West Shore ferries to the Marine Department on April 1, 1899. Prior to this time the ferryboats had been operated under the direction of the River Division Superintendent of the West Shore Railroad.

The tremendous growth in the ferry business necessitated larger and more up-to-date facilities and as fast as new equipment was available the obsolete boats were sold. The old side-wheelers in use between New York and Weehawken, N. J., when the operation of the ferries was turned over to the Marine Department, have all been replaced by double-deck, screw ferry-boats, except the Buffalo,

built in 1896, which is still capable of service and is held in reserve. It is expected that it will be replaced by a modern ferryboat at an early date.

The old side-wheel boats, replaced by modern ferryboats, were the Chester W. Chapin, Midland, Albany, Oswego, Newburgh, and Kingston. Instead of these old-fashioned side-wheelers the company now operates boats with a capacity two and a half times as great. These boats are the West Point, Syracuse, Rochester, Utica, Niagara, Catskill, Weehawken and Stony Point.

The equipment of the Marine Department of the New York Central consists of 306 units, classed as follows:

Nine ferryboats, 62 car floats, 34 grain boats, 21 tugs, 7 steam lighters, 8 steam hoisting barges, 2 gasoline hoisting barges, 26 hand hoisting barges, 11 scow barges, 109 covered barges and 17 covered refrigerator barges.

The tugboats are all of steel construction and 19 of them have been built in the last twenty years. The steel tugs replaced old wooden ones which could no longer handle the increased business.

Six of the seven steam lighters are of steel construction and one of wood. All of them have been built since 1900. These boats are used to carry express and light freight which requires prompt handling.

The eight steam hoisting barges each have a lifting capacity of from twenty to forty tons and are used for handling heavy freight. The two gasoline lifting barges each have a capacity of five tons, while the twenty-six hand hoisting barges each have a capacity of from two to five tons. All of the hoisting barges, except two, have been built since Mr. Pollock became manager of the Marine Department.

Eight of the eleven scow barges are of comparatively recent construction. Their chief use is to handle ashes from the steam tugboats and for lightering freight.

The large fleet of 109 covered barges, used for transporting freight between steamers and wharves, has been developed almost entirely in the last twenty years. The covered refrigerator barges, of which the company now has 17, have all been built since 1899. They are especially designed for the transportation of perishable freight during warm weather and have proved so successful that the company contemplates building ten more in the immediate future.

The 62 car floats are used to transport cars between rail terminals and pier stations in New York harbor, for the interchange of cars between railroads and frequently for the movement of cars to

different parts of the harbor when shippers or consignees have a minimum of six cars. The large number of floats required to transport cars furnishes some idea of the great part played by the Marine Department of the New York Central in handling the harbor traffic.

Thirty of the car floats are of steel construction and 32 of wood. All of them have been built since 1900. The number of floats and their respective capacity follows: Four, 8 cars; four, 10 cars, thirty-two, 12 cars; fourteen, 16 cars; eight, 17 cars.

The fleet of car floats, operating 24 hours a day, is capable of moving back and forth between various harbor points hundreds of freight cars daily, thus playing a big part in transporting the large quantities of supplies required to keep New York going.

The railroad's fleet of grain boats, 34 in number, transfers grain to the holds of ocean-going vessels through the means of floating grain elevators. The company's grain boats have all been built since 1899, prior to which time all grain moving over the New York Central and the West Shore Railroads had been transferred to ocean-going vessels by boats chartered from individual owners.

The New York Central has always been a sea-going railroad. Its Marine Department has kept apace with the growth of the business of New York harbor and its extensive equipment makes it a vital factor in handling the traffic of the metropolitan area and the vast inland territory served, as well as enormous export business.

The railroad's excellent lighterage facilities enable it to handle United States mails in New York harbor with remarkable efficiency. The New York Central, on August 1, 1921, under contract with the Post Office Department, began to meet all incoming vessels at Quarantine for the purpose of taking off mails so that they could be delivered more expeditiously. This means of expediting mails coming into New York harbor was a part of Postmaster General Will H. Hays' program to speed up the delivery of foreign and coastwise mails and under this system mail now is frequently delivered in New York City or started on its way to interior destinations hours before the steamships dock at their respective piers. Under the old arrangement the mail was not unloaded from the boats until after they had docked, frequently causing a delay of 24 hours or more.

The New York Central harbor boats are also used to transport mail between harbor points.

In the management of the Marine Department of the New York Central Railroad, Manager Walter B. Pollock is assisted by Captain Reginald Fay, superintendent; B. F. Ward, supervising engi-

neer; F. L. Pollock, superintendent of West Shore ferries, and J. N. Crocker, supervisor of mail traffic.

During the twenty-six months of Federal control of the American railroads for the prosecution of the War, Mr. Walter B. Pollock was Marine Director in charge of all marine operations in New York harbor, a period in which this was the centre of transportation operations of vital importance to the United States and its European allies. He has been president of the New York Produce Exchange since June, 1920, whose members deal in grain, flour, cotton seed oil and other commodities, being the first railroad official ever elected to this very important and influential commercial organization.

GEORGE W. STERLING

GEORGE WARING STERLING was born in Poughkeepsie, New York, November 22, 1874. He entered the employ of Metropolitan S. S. Co. on January 1, 1890, and on January 1, 1912, upon the consolidation of the Metropolitan S. S. Co., The Main S. S. Co., and the Eastern S. S. Co. under the name of the Eastern S. S. Corporation, he was appointed freight traffic manager.

On February 1, 1918, Mr. Sterling joined the Shipping Board, under Mr. Carey, director of operations, as manager of traffic department in charge of making all Shipping Board rates. On September 30, 1918, he resigned from the Shipping Board and returned to the Eastern S. S. Lines, and was elected vice-president.

On November 1, 1919, he was again called to serve the United States Shipping Board and was made assistant director of operations, in charge of all Shipping Board matters in New York City, which position he held till October 6, 1920, when he was appointed receiver of Victor S. Fox & Company, Inc., Consolidated Maritime Lines, and took over the management of six steamers and six sailing vessels.

On November 17, 1920, he was also appointed receiver of the Atlantic-Adriatic S. S. Corp., taking over the management of seven steamers, and on December 20 of the same year he was appointed receiver of the American Star Line, taking over the management of two steamers.

HOLLAND-AMERICA LINE

ONE of the most popular of the trans-Atlantic lines engaged in passenger service between New York and the European continent is the Holland-America Line, widely famed for its staunch vessels and its excellent service; but this is only one feature of the activities of that line, which is really the most important steamship organization of the Netherlands. The date of the organization of the line was on April 18, 1872, when, at the instigation of Sir Otto Reuchlin and A. Plate, Esq., a number of bankers and manufacturers met and organized to establish a service between the Netherlands and the United States which should be an efficient medium for personal travel and carrying of freights,

The line began with a service of two steamers, the "Rotterdam" and the "Maas," small pioneer ships, from which has grown the present large and important fleet of passenger and freight steamers, tenders, lighters, etc., which with other vessels now building will amount to 415,159 tons.

The present organization is under the patronage of the Prince Consort of the Netherlands, the officers being J. Rypperda Wierdsma, President; Adrian Gips and W. F. Piek, Managing Directors; and the board of directors is composed of W. Westerman, President; E. P. de Monchy Rzn, Vice-President; S. P. Van Eeghen, Mr. Th. A. Fruin, I. J. Havelaar, H. Van Kempen, A. G. Kröller, W. F. Leemans, Jan Lels, Mr. W. A. Mees, Mr. F. S. Van Nierop, Jhr. M. Reuchlin, L. A. E. Suermondt, C. W. F. P. Baron Sweerts de Landas Wyborgh, J. H. Veder.

The New York service of the Company is a passenger service from New York via Plymouth and Boulogne sur Mer to Rotterdam. There are also passenger services between Rotterdam and Canada, known as the Canada Line, and between Rotterdam, Antwerp and Spain to Cuba, Mexico, New Orleans, and back to Rotterdam via Spain. There is a regular freight service between Boston, Philadelphia, Norfolk, Newport News, New Orleans, Savannah to Rotterdam; from Galveston to Rotterdam and from New York to the Dutch East Indies (Java) and back to New York via Suez, Panama or the Cape of Good Hope; also services from Holland to British India and to South America, while in the course of 1920 a regular service has been started from Rotterdam and other European ports, to San Francisco and other ports on the Pacific Coast of the United States and Canada, with very large steamers provided with refrigerator space for the carrying of perishable cargo.

STATEN ISLAND'S GREAT CHAIN OF THOUSAND FOOT PIERS

POUCH TERMINAL, AMERICAN DOCK, AND MUNICIPAL PIERS

THAT portion of Staten Island, known as the easterly shore, has been familiarly known for many years, especially in shipping circles, as the "Gateway to New York," on account of the location of a Quarantine Station where all incoming vessels are compelled to stop before entering the Harbor, for inspection by health officers.

As early as 1799, the State of New York established a Quarantine Station at Tompkinsville, probably on account of the sheltered anchorage and depth of water at this locality, and the old Quarantine Station remained here until about 1869, when the development of Staten Island required that it be transferred to a new location further down the Bay and near the Narrows, where vessels with contagious diseases aboard could be detained further away from the City.

The first ferry from New York, to Staten Island, owned and originally operated by Captain Vanderbilt, personally, landed its passengers adjacent to the old Quarantine Station and this point was used as a ferry landing for nearly 80 years or until the present City of New York established its magnificent municipal ferry service at St. George, a short distance north of the old landing.

Shortly after the removal of Quarantine, the greater portion of the old grounds were sold to the American Dock Company, and a storage plant established there.

Since 1872 this historic ground has been used continuously as one of the largest independent warehouse properties in the Port of New York, and although it was originally intended for the exclusive storage of cotton, new fire-proof buildings have been added in recent years, and the entire plant re-constructed with large piers to accommodate ocean-going cargo steamers.

One of the attractive features to receivers of cargoes at this Terminal is the railroad connections whereby merchandise can be trans-shipped direct from side of vessel into cars without extra handling or cartage, and it is the only Terminal in the City of New York having direct rail connections, with trunk lines of New Jersey, independent of float system.

This Terminal now covers about 30 acres and has 33 warehouses containing 7,000,000 cubic feet of protected storage area, also four large covered piers, all 1,000 feet in length and from 70 to 185 feet in width.

The American Dock piers adjoining on the north the 12 new Municipal Terminal piers which extend from Tompkinsville to Clifton are included in America's great chain of 1,000-foot piers, the finest and most modern development of port facilities in this country.

The extent of this new development can be realized by the fact that the combined wharfage for ocean going steamers is greater than that provided on Manhattan Island and 48 cargo vessels can be accommodated at one time. The distance around these piers is six and one-half miles and provides an area of 1,800,000 square feet.

The south end of this great chain of thousand foot piers is made up of the three modern type piers of the Pouch Terminal, Inc. Although the water frontage of this terminal is only 1,000 ft., it covers an area of 33 acres and has three covered piers, all completely protected by sprinklers inside and outside, each 130 ft. in width by 900 to 1,150 ft. in length with concrete deck, constructed on most modern type, adaptable for ocean-going vessels, railroad tracks extending the full length of piers and having slip room between piers of over 300 ft.

Linked together by direct rail connection, the American Dock, Municipal and Pouch Terminals, form a great terminal with 21 covered piers 1,000 ft. in length covering a water frontage of two miles and forming the greatest chain of port facilities to be found in America.

WILLIAM E. WILLIAMS

THE HOUSE OF WILLIAM E. WILLIAMS, 62 Front St., New York, is a unique institution in the development of the Port of New York. About 12,000 square feet of space is occupied and well filled with large stock of all kinds of ship supplies and equipment.

This house is the only one of its kind that is equipped with a pattern shop, foundry and machine shop where special items can be made on short notice. In addition to making various items for ship's use, a full line of high pressure regrinding valves are manufactured in various types to suit different requirements. This is the only valve factory in Greater New York. Everything from a needle to an anchor can be supplied by this establishment. No expense has been spared in making 62 Front St. headquarters for the economical operation of supplying ships. Most ship owners have recognized this fact and a thriving business is the result.

STATEN ISLAND'S GREAT CHAIN OF 1000 FOOT PIERS

Extending from Tompkinsville on the right to Clifton on the left, consisting of 21 concrete covered piers of ultra-modern construction. Forty-eight cargo vessels can be handled at a time. The three piers on the left, numbers 19-20-21, form the Pouch Terminal; the five on the right, numbers 1-2-3-4-5, form the American Dock Terminal; and the thirteen central piers, numbers 6 to 18 inclusive, form the new Municipal Terminal. Above, old quarantine station as it was in 1858; present site of American Dock Terminal.

OUT OF NEW YORK—TO ALL PORTS OF THE WORLD

THE ease with which we travel today from one continent to another, has caused us to fail to realize what serious obstacles were presented before the days of steamships and their many luxurious appointments for comfort.

Way back in the beginning—when the first man straddled a log and paddled across streams, he started humanity adventuring by sea.

The first great sailors of record—the Phœnicians—as early as 604 B. C. cleared from a Red Sea port and by hugging the coast and keeping always to the right, rounded the southern promontory of Africa. After three years they returned to Egypt via the Straits of Gibraltar.

Until the end of the fourteenth century, however, the old world sailors—though fearless and hardy—dared not go out of sight of land—not knowing what was "on the other side."

Ibn Khaldun, the Arab, at that time, described the Atlantic as "a vast and boundless ocean, into which ships did not dare venture out of sight of land, for even if the sailors knew the direction of the winds, there was no inhabited country beyond it and they would run great risks in being lost in the mist and darkness."

But this was centuries ago!

From the breaking of pathways for marine commerce through the unexplored expanse by Prince Henry of Portugal—known as "the Navigator" to the later advent of the steamship—maritime intercourse between distant lands developed remarkably.

And as the fleets grew and types of propulsion developed for-- eign trade expanded so that it became necessary for owners to make dependable arrangements for their ships' supplies—in the various ports of trade.

It was man's power to "look ahead," coupled with strength of purpose, that gave to the fleets of all countries a world-wide Gargoyle lubrication service that they now enjoy.

The Vacuum Oil Company has pioneered in the business of supplying the world's lubrication requirements.

Now ships clear from their home waters—many for strange ports. Their correctly lubricated engines throb steadily driving the ship relentlessly through storms and against winds and tides. The engineer knows that he can depend on the Gargoyle Marine Oil in the system.

But he does not carry a supply sufficient for the whole voyage. And does not have to worry about his oil supplies.

His owners have arranged by means of their Gargoyle Marine Oils Contract to keep him supplied with correct lubrication at any port where the ship might anchor.

He knows that while the waters may be strange—just over the horizon is a land of plenty—for the ships' engines—for a complete stock of Gargoyle Marine Oils is carried at all ports of the world.

But how do these stocks get there?

Every barrel of Gargoyle Marine Oil is manufactured at the Vacuum Oil Co.'s own refineries—Rochester, N. Y.; Paulsboro, N. J., and Bayonne, N. J.—so ships carrying heavy cargoes of our products are continuously clearing New York harbor for foreign ports.

And in this—the Pilots of the Port of New York—play an important part.

Since trade had its birth, transportation has been the medium through which it has grown in volume. Transportation has found its way along dependent upon certain well defined trade lines and routes upon both land and water.

In any given age of history, said a well-known authority on transportation, the nation that has been long dominant has been the one that has furnished or protected the most affected highways for the movement of the commerce of the times.

The trade lines and routes of New York harbor—our great highway to the Atlantic—lead to every port of the globe.

It is natural, then, that the greatest protection must be afforded shipping in North America's busiest harbor.

And it is done—by the Sandy Hook Pilots.

ROBT. J. TOD

ROBT. J. TOD, born in Cardiff, Wales, in 1886, has had 20 years shipping experience, commenced business at an early age with one of Cardiff's largest steamship owners. Then, looking for more experience, went to London where he was connected with ship owners and brokers for five years. Being a member of the Baltic Exchange, this gave him thorough knowledge of the business, and in 1911 came to New York and has now had 10 years' good American experience. Is an American citizen, a member of the Produce Exchange and the Maritime Exchange and head of the well known firm of ship brokers, Robt. J. Tod Co., with offices at 25 Beaver Street, New York. Mr. Tod, through the large number of foreign and American steamers handled by him, always giving preference whenever possible to New York, is one of the men in recent years who has helped to make the port what it is today.

THE FEDERAL COMPOSITION AND PAINT CO., Inc.

THE FEDERAL COMPOSITION AND PAINT COMPANY, INC., whose offices are located at 17 Battery Place, New York City, is one of the long established and best known firms in its line. The Company's business dates from 1901 and its endeavors embrace not only the manufacture of paints and compositions, but also the application of its product on a contract basis. This latter service calls for the maintenance of an organization ready to undertake the cleaning and repainting of vessels of all kinds upon short notice.

The name Federal and the Federal trade mark are familiar to shipping men the world over, and admittedly represent to them a quality and kind of paint in which they can place full confidence. The Company manufactures marine paints and compositions only, and has builded its present extensive business because its intimate association with and understanding of the needs of the ship operator has enabled it to produce a superior product.

Federal Paints and Compositions are manufactured at a modern factory, greatly enlarged in 1920, and equipped throughout with the most modern special paint machinery. The Company maintains its own chemical and research laboratory, and expert chemist and experienced managers, who supervise each step in the manufacturing processes and prove the standard quality of the finished product.

The Company numbers among its customers the most prominent steamship lines, operators and ship builders who enter the ports of the United States. The Company's operations center in the Port of New York, but it also maintains a branch in Philadelphia and is represented by agents in all the principal ports on the Atlantic, Gulf and Pacific Coasts. In British ports the Federal product is sold by the British Anti-Fouling Paint and Composition Co., Ltd.

Even with its far flung activities, the Company is no more widely known than is its President, Mr. Andrew Baxter, who is an ex-shipmaster and who, before retiring from the sea, had commanded many fine and famous sailing vessels. Mr. Baxter's numerous voyages carried him into practically every sea and gave him an unusual insight into the paint needs of vessels trading in any waters. Mr. Baxter takes an active and personal interest in every detail of the Company's business and the problems of painting which are submitted to it. Mr. Baxter has surrounded himself with men who, like himself, have followed the sea and know, from actual experience, of the requirements of protecting every part of a vessel.

Mr. Baxter is the representative for the Eastern Coast and in full charge of the vessels of Andrew Weir & Company, London, one of the largest British Companies with world-wide interests. Numerous vessels of this Company enter Atlantic ports, particularly the port of New York, during the course of the year, all of which receive the care, attention and benefit of Mr. Baxter's great shipping experience.

SWEDISH-AMERICAN LINE

THE Swedish American Line, maintaining a direct passenger and freight service between New York and Gothenburg, Sweden, was organized in the fall of 1915. Its first sailing from New York took place early in 1916, when S. S. "Stockholm" sailed for Gothenburg. S. S. "Drottningholm" has been in service since May, 1920.

From the start the line won favor with the traveling public because of its fast, comfortable, luxuriously appointed steamers, excellent accommodations and superb service, and this well-merited popularity has increased with the years through the company's consistent policy that no effort be spared to please and satisfy its patrons. The increasing volume of travel via these steamers is the best proof of the soundness of this policy.

In connection with this passenger service there is a freight line operated under the same management and under the style "The Swedish America-Mexico Line," which maintains a regular cargo service between Swedish and Baltic Sea ports and New York. This line operates the following cargo carriers: S. S. "Braheholm" (oil burner), 8,800 tons; motor ship "Stureholm," 7,800 tons; S. S. "Carlsholm," 6,100 tons, and S. S. "Gustavsholm," 4,800 tons.

The head office of the joint companies is in Gothenburg. Mr. Dan Broström, former Swedish Minister of Marine, is the managing director. Mr. G. Hilmer Lundbeck is the American representative, with offices at 21-24 State Street, New York, where also the general passenger offices are located.

Furness, Withy & Co., Ltd., 34 Whitehall Street, New York, are the general freight agents. Branch offices for the booking of passengers and cargoes are located in Chicago, Minneapolis, Seattle and San Francisco.

BRIGGS BITUMINOUS COMPOSITION COMPANY, Inc.

THIS Company, of which Mr. Andrew Baxter is President, and whose main offices are at 17 Battery Place, is engaged in the sale of bituminous protective coatings for the underwater inner hull and compartments of steel vessels, and their applications. This Company has pioneered in this line and enjoys high repute for the quality of its products and for the accompanying service. Many will recognize its trade-named products Tenax Composition and Ferroid Enamel and will have used Tenax Marine Glue.

The Company operates its factory at 1327 Thirty-eighth Street, Brooklyn, N. Y., and maintains a service organization equipped to undertake commission in practically any Eastern port. Its agents are likewise ready to handle its business in other ports.

ARKELL & DOUGLAS, Inc.

THE FIRM OF ARKELL & DOUGLAS, Inc., was founded some 75 years ago in Canada by Mr. James Arkell. About 1846 the firm was established in New York under the name of Arkell & Elliott and immediately engaged extensively in the lucrative West Coast mining trade. In the next few years they shipped many cargoes of mining supplies to the gold fields of Australia and California. The trade established in those early years was the foundation upon which the firm has steadily built one of the largest and most successful shipping and commission houses in New York.

In 1879 the name of the firm was changed to Arkell & Co., under which the business was conducted till 1883, when Mr. Wm. H. Douglas entered the firm and the name was changed to Arkell & Douglas. The business was incorporated in 1909 with Wm. H. Douglas as president. Mr. Douglas has been the active head of the company since 1886.

GREAT LAKES DREDGE & DOCK CO.

THE GREAT LAKES DREDGE AND DOCK COMPANY, which specializes in dredging and marine construction is an outgrowth of the old concern of Lydon & Drew, of Chicago, Illinois, and was incorporated in 1905, under the laws of the State of New Jersey and have acquired since that time the plants and organizations of various dredging concerns on the Great Lakes.

In 1911, this concern was attracted to the Atlantic Coast by the large amount of submarine rock excavation being carried on by the United States Government, and, securing a large contract for this class of work, started an office in Boston, Mass. In 1913, contract for dredging and rock excavation was secured from the United States Government at Albany, N. Y., and an office opened at that point. In 1916, contract for the removal of Coenties Reef, East River, New York, was secured and an office opened in New York City, and the company's main activities in this territory date from that time.

The Company has, in the last twelve years, taken on contracts running into millions of dollars for the United States Government at New York, Philadelphia and Albany, the main contracts of which were the dredging for the Quartermaster Terminal at South Brooklyn: removal of Mameluke Ledge, Delaware River, at Philadelphia; dredging and filling at Quartermaster Terminal, Greenwich Point, Philadelphia, and dredging and filling for the Emergency Fleet Corporation at Bristol, Pa.

This Company also numbers among its clients some of the largest ship-building and dry-dock concerns in New York Harbor, as well as having taken care of the wants of some of the smaller shipyards in and around New York.

This company's plant is so extensive that it is able to handle contracts, both large and small, with the greatest despatch. Besides two hydraulic dredges, two dipper dredges, two submarine rock drills, ocean-going tugs and scows in New York Harbor, this company owns and operates at its various points 23 dipper dredges, 6 hydraulic dredges, 8 drill boats, 32 tugs, 13 floating pile drivers, 23 shore pile drivers, 30 floating derricks, 6 shore derricks, 81 dump scows, 100 deck scows, together with the various smaller pieces of plant required in conjunction with marine work of every description.

The Company's offices are located at New York, Albany, Buffalo, Cleveland, Chicago, Milwaukee, Duluth, and Sault Ste. Marie.

The New York representatives of this concern are Thomas H. Mackie, vice-president; J. R. Williams, manager; and P. W. Dickinson, superintendent.

THE NEW YORK AND PORTO RICO STEAMSHIP COMPANY

THE NEW YORK & PORTO RICO STEAMSHIP COMPANY, known as the Porto Rico Line, was incorporated under the laws of the State of New York in October, 1890, and has been operating uninterruptedly between the United States and Porto Rico ever since. It commenced operations with several small chartered steamers but shortly acquired several vessels of its own, and its fleet has gradually been increased until it is now operating fifteen American steamers, of which the "San Lorenzo," "Porto Rico," "Coamo," "San Juan" and "Ponce" are well known to the traveling and commercial public. The running time between New York and San Juan has been reduced from nine to four and a half days, and the Company has been instrumental in giving the Island of Porto Rico a frequent and regular steamship service equal to that enjoyed by any of the West Indies.

A weekly freight service between New Orleans and Porto Rico has been maintained by the Company since 1899.

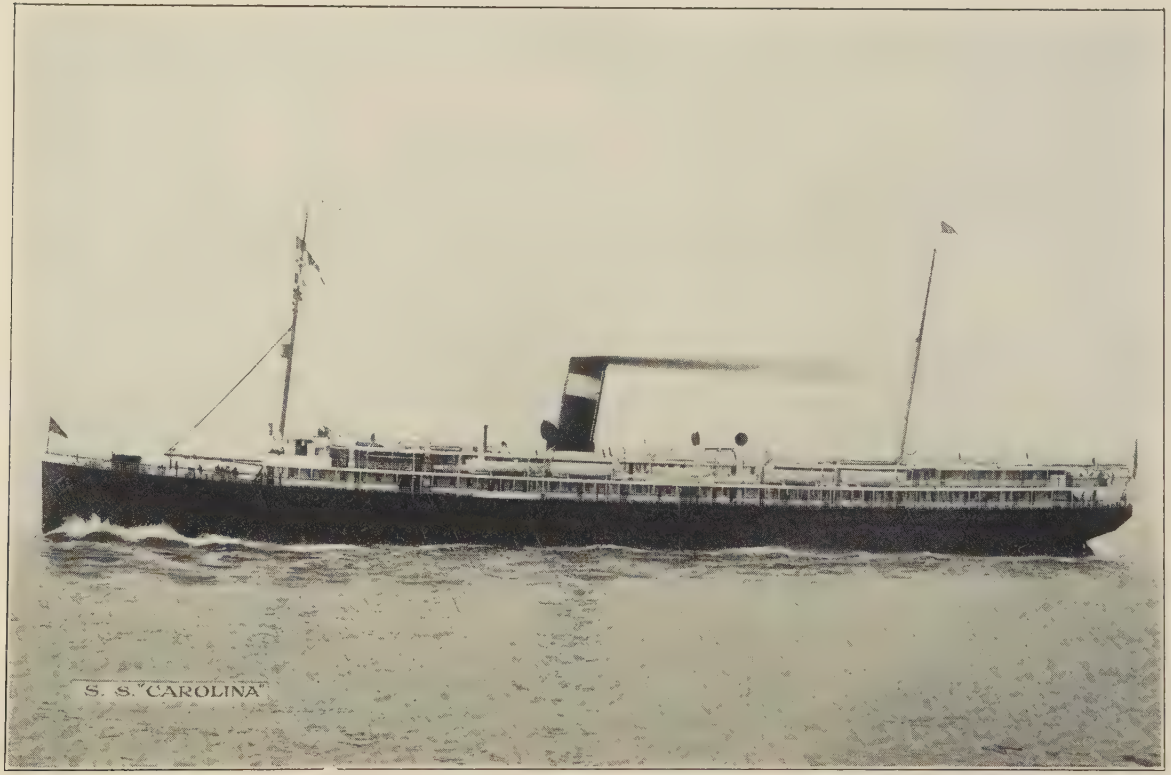
The head office of the Company is located at 25 Broadway, New York City.

J. F. WHITNEY & CO.

WHITNEY'S is perhaps one of, if not the oldest, firm of ship brokers in New York. The firm was founded prior to 1800 by Nathaniel Ruggles Whitney and his three sons, Jonathan S., James F., and Edward Whitney.

Nathaniel was the active head of the business till about 1826, when he was succeeded by James F., who was active in the firm for sixty years. The other brothers, Jonathan and Edward, departed this life in the sixties. The Whitneys were born in Watertown, Mass., and a full record of the family is in evidence in the old South Meeting House in Boston.

One of the peculiar conditions regarding Whitney's is that all the present members of the firm have been juniors in the office, each having served from twenty-five to fifty years, and that since 1894 no person named Whitney has been partner. The senior member, Mr. George T. Hay, joined the office force in 1872, and should he live till July 22, 1922, will have rounded out a half century of service with Whitney's. The other members of the firm are Theodore Dougherty, Philip Standerman and John G. Edgett. The office of the firm is at 10 Bridge Street, New York City.



S. S. CAROLINA OF THE PORTO RICO LINE

Sunk by a German submarine June 2, 1918, while en route from Porto Rico to New York with two hundred and twenty passengers aboard. Five passengers and eight members of the crew were lost. The Carolina was the only American passenger vessel destroyed by the enemy in American waters during the World War.

THE ROYAL MAIL STEAM PACKET COMPANY

THE ROYAL MAIL STEAM PACKET COMPANY, which entered the trans-Atlantic service this year, has the distinction of being the oldest British steamship organization, as well as one of the largest. Since its foundation by royal charter from Queen Victoria, in 1839, the company has witnessed every stage of steamship development, from paddle-wheels and screws, down to the present oil-burning turbine liners.

The company started with a small fleet of iron paddle-wheel steamers carrying sails, and ranging from 650 to 2,000 tons, several of which were armed with rows of guns like old-fashioned frigates. They were, in fact, the pioneers of the present British naval reserve, and as they carried the mails it was considered desirable for them to be in condition to defend themselves in event of war. At first the R. M. S. P. service was confined to the West Indies, but later it was extended to Vera Cruz and Central American ports. In 1849 the company organized a mule and canoe service across the Isthmus of Panama, opening a route, via Colon, to San Francisco and ports in South America. Large numbers of California gold seekers traveled by this route, which is often mentioned in stories of the period.

From the first years of its establishment the R. M. S. P. made constant progress, extending its services and keeping pace with every development in steamship construction. It also increased its connections. Today with its associated companies, it controls over 1,900,000 tons of shipping. Its affiliated organizations include the Pacific Line, Lamport & Holt, Union Castle, Elder-Dempster and Shire Lines, with services touching ports in the United States, West Indies, Central and South America, South Africa, China and Japan.

The entrance of the R. M. S. P. into the trans-Atlantic passenger service in May, 1921, marked a new epoch in the company's policy and formed another important link in its chain of operations. The new service was inaugurated with three 15,000 ton steamers, the Orbita, Orduna and Oropesa, on which the company's high standard of luxury is maintained in the matter of cuisine and the appointments of public and state rooms. These vessels will run fortnightly between New York, Cherbourg and Hamburg until the beginning of 1922, when it is probable that other vessels will be added and a weekly service established.

The head office of the Royal Mail Steam Packet Company is in Moorgate Street, London. The court of directors includes the following: Sir Owen Phillips, G. C. M. G., M. P., chairman; Sir Joseph Savory, Bart., deputy chairman; the Duke of Abercorn, James Cam-

eron Head, A. Nevile Lubbock, Edward Norton and H. E. Wright. The General Manager is J. W. Clark.

Royal Mail interests in New York are in charge of the firm of Sanderson & Son, 26 Broadway, one of the oldest shipping concerns in the city, having been established in 1878 by the late Richardson Sanderson, assisted by his three sons. Of these Lloyd B. Sanderson remains at the head of the New York office and is the Royal Mail's local director, Harold Sanderson is chairman of the White Star Line and Oswald Sanderson is managing director of the Ellerman-Wilson Line of Hull.

LORD DRY DOCK CORPORATION

THE LORD DRY DOCK CORPORATION, situated at West New York, New Jersey, opposite 80th Street and Riverside Drive, New York City, opened early this year its new plant, which is now in full operation.

This Corporation was founded some years ago and, in addition to the above plant, operates a large plant at Providence, R. I., with complete shops for ship repair work and a 3,500-ton Marine Railway.

The West New York Plant is complete in every manner for the expeditious and economical repairing of all kinds of vessels. The property consists of 41 acres of land with a water frontage of 2,000 feet and 800 feet of bulkhead; two piers of 800 ft. and 540 ft., the former with 26 ft. and the latter with 22 ft. depth of water at mean low tide. On the 800 ft. pier there is a stiff leg derrick of 100 tons lifting capacity at 100 ft. radius, flat loom.

In addition to its piers there are six dry docks of from 1,000 tons to 10,000 tons capacity. All the piers, shops and dry docks are connected by rail to a direct siding of the West Shore Railroad. This railroad runs through the yard.

There are also fully equipped machine, carpenters', pipe, plate and blacksmith shops, also floating machine and welding shops and traveling cranes of 15 and 30 ton capacity.

The Company's launch runs from Duffy's Landing, foot of 80th Street, North River, New York City, to the West New York Plant at regular intervals.

COLUMBIA TRUST COMPANY

THE early history of the port and city which was to become the commercial and financial center of the western hemisphere and, for a time at least, of the whole world, provides an interesting background for the study of its remarkable economic rise and present predominance. Three hundred and ninety-seven years ago—some time in April, 1524—New York was discovered by Giovanni da Verrazzano, a Florentine, who with a crew of fifty men in a hundred-ton caraval called "Dauphine," was then engaged on an expedition to find a passage to India. In his subsequent account to Francis I., King of France, at whose behest the voyage was made, there appears the first known description of New York harbor:

"At the end of a hundred leagues we found a very agreeable situation located within two prominent hills (the Narrows) in the midst of which flowed to the sea a very great river which was deep within the mouth; and from the sea to the hills of that place with the rising of the tides, which we found eight feet, any laden ship might have passed. On account of being anchored off the coast in good shelter, we did not wish to adventure in without knowledge of the entrances. We were with the small boat, entering the said river to the land, which we found much populated. The people, almost like the others, clothed with the feathers of birds of various colors, came toward us joyfully, uttering great exclamations of admiration, showing us where we could land with the boat more safely. We entered said river, within the land, about half a league where we saw it made a very beautiful lake (Upper Bay) with a circuit of about three leagues, through which they (the Indians) went going from one and another part to the number of XXX of their little barges, with innumerable people, who passed from one shore to the other to see us. In an instant, as is wont to happen in navigation a gale of unfavorable wind blowing in from the sea, we were forced to return to the ship leaving the said land with much regret because of its commodiousness and beauty, thinking it was not without some properties of value, all of its hills showing indications of minerals."

But, despite the commercial possibilities indicated, France did not take advantage of Verrazzano's discovery, nor, in turn, did Portugal avail herself of Estavan Gomez's expedition which brought him to the same place in 1525; thus New York history does not properly begin until 1607 when Hendrik Hudson, using one of Gomez's maps, rediscovered this section of the country for the Dutch.

Commercial activity developed almost immediately. The Dutch sent several expeditions of colonists who engaged in fur trading, buying from the Indians and sending their purchases to Holland. These first attempts in foreign exports proved very profitable, so that expansion was rapid. By 1614 a regular system of exchange had been created; 360 beads were declared equal to 1 fathom, and 6 wampum equal to 1 penny of English currency. Here were laid the foundations for our great commodity markets and our organized domestic and foreign banking system of today.

Thus since its origin, New York has always been primarily interested in commerce and finance, and its history ever since has been one of continuous and exceptional growth. Its remarkable development is pre-eminently attributable to foreign trade, and without question this foreign trade has been attracted in the first instance by New York's incomparable harbor.

The increasing volume of our foreign business has depended largely upon a corresponding widening of our banking facilities so that as time went on, the role played by finance in the development of our metropolis has become more and more important. The bankers of our city have gradually extended their functions and strengthened their influence until today New York is the dominating financial center of the world.

The Columbia Trust Company has participated in this development; the history of its foreign department has been one of consistent and truly remarkable progress. Having begun operations with a nucleus of a manager and one assistant, it now occupies the entire third floor of the bank's building at 60 Broadway. The Columbia Trust Company has thus become a prominent member of the group of financial institutions interested in foreign trade, and commensurate with its growth, it has assumed the greater responsibilities which the present age is imposing upon the banking community.

As to the future, due to the increasing complexity of industrial organization and the greater magnitude of enterprise, bankers will be called upon to contribute even more largely to the development of our metropolis. New York has grown to tremendous proportions, yet its progress has by no means ceased. An intensive exploitation of its railroad facilities and its 780 miles of waterfront promise a rich reward. It is indeed impossible to predict the limit of New York's expansive possibilities.

EARLY SHIPPING DAYS OF THE BANK OF THE MANHATTAN CO.

THE history of the Bank of the Manhattan Company has been closely identified with the maritime traditions of New York City. Founded in 1799, the group of men gathered for the enterprise included to a rare degree the outstanding leaders in the political and commercial life of the time. It is not surprising, when one considers the important place which shipping and trading had always held in the business activities of the little community, that much of the Bank's strength was drawn from its close relationship with the shipping industry and the men who were actually engaged in it.

At the time that the Bank was founded New York had to its credit 135 years as a trading city. Many of the founders and first directors were men whose fathers and grandfathers before them, even back to the time of the Dutch, had made ships their business in life.

The famous Marine Society, established in 1769, included among its most enthusiastic founders and first officers men who later were to help establish the Bank.

The names of Leonard Lispenard, the first President, Robert and Philip Livingston, George Codwise, James Creighton, Paschal Smith, Henry Tredwell and innumerable others appear in the roster of the Society, and also figured in the early history of the Bank.

One cannot, perhaps, overestimate the influence of the Marine Society on the development of New York's shipping. Founded in the period of depression in commercial circles, following the non-importation agreement in 1765, it set out originally to relieve distressed shipmasters or their widows and children who were facing hardship, and also constructively to promote maritime knowledge and the community's shipping interests. The Society was long active, and its members played no small part in the later development of the shipping industry.

Many other famous shipowners and traders were active in the establishment of the Bank, and not a few appear in the Directorate.

Captain Richard Randall, whose legacy, which made possible the famous Sailors' Snug Harbor, included fifty shares of the Bank stock; Gilbert and John Aspinwall, who traded to St. Petersburg; Henry A. and John G. Coster, trading with Holland and the Indies (John G. Coster was elected President of the Bank in 1826-; Preserved Fish, founder of the first packet line to Liverpool; Archibald Gracie, John W. Low, and G. G. Howland—are all names famous alike in shipping history and the history of the Bank.

Among the founders of the pioneer Black Ball Line, established in 1816, were Francis Thompson and Isaac Wright, original stockholders in the Merchants Bank (now merged with the Bank of the Manhattan Company).

Aside from the individuals connected with the Bank who figured in the development of American shipping and commerce, the institution itself used generously and wisely its financial resources to foster the growth of the industry. Its close contacts with shipping interests, its rare background of knowledge and experience, gave it a commanding position for financial service and advice among ship owners and traders—a position which it has maintained to this day.

THE UNION TRANSPORT CO., Inc.

THE UNION TRANSPORT COMPANY, Inc., now an important factor in the handling of ships in the Port of New York came into prominence during the War period. The war-time congestion of the harbor of New York made the work of handling ships a task of many problems.

This company, in spite of these perplexities, made a record at that time for the efficient manner in which it dispatched ships and the quick turn-around of vessels which it proved able to accomplish in spite of the unprecedented congestion of the port.

This congestion with which the company was successfully battling attracted the attention of its President, Mr. Hugo Behrend, to the study of the port, its drawbacks and its needs and the relief measures necessary to enable the Port of New York to meet the enlarged demands for increased facilities for the efficient and prompt handling of vessels and freights. His interest in the welfare of this Port and his comprehensive knowledge of its problems is well known.

The Union Transport Company, Inc., has added to its facilities two of the largest double deck docks in the new terminal now nearing completion at Stapleton, S. I. These docks, with every approved modern improvement for quick and efficient handling of in and out cargoes, excelling any heretofore available in this port, will soon be ready for service of the local steamship export and import trade, and bring relief, to all concerned from the delays and high costs of present methods.

THE NORWEGIAN-AMERICA LINE

THE idea of a National Norwegian America Line was conceived in the early years of the present century by Mr. E. A. Svanoe, chief engineer, Mr. Stephen Stephenson, captain of the port of Kristiana, and Mr. Johs Bull, engineer, of Glasgow.

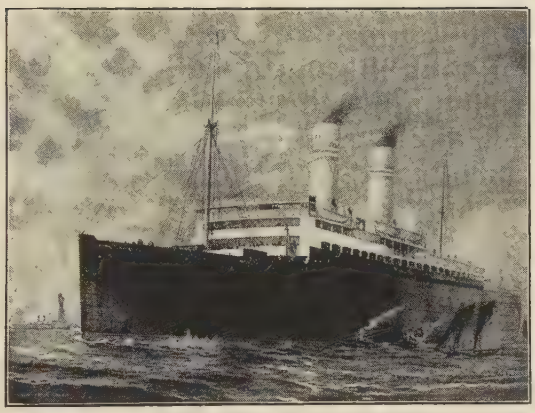
It was intended to place the plan before the general public in 1905, but the critical development of relations between Norway and Sweden rendered that impossible and it was not until the Union had been dissolved and Norway had become an independent country that the actual work of organization was undertaken. By the spring of 1911 the organization had been perfected and Mr. Gustav Henriksen was appointed the first managing director of the company. The first two ships were named the Kristianiafjord and Bergensfjord. They were each of 11,000 tons and both cost eight million kroner and were placed in commission in the fall of 1913.

From the very first the venture proved remarkably successful and in 1914 another ship, the Stavangerfjord of 12,500 tons, was ordered built to meet the demands of commerce. She was launched in the spring of 1917. Only one misfortune has marred the successful career of the company; that was the stranding of the Kristianafjord off Cape Race in a thick fog on July 15, 1917. All attempts to set her afloat failed and she became a complete loss.

The fleet of the line today consists of two passenger ships of respectively 16,000 and 18,000 tons; six tramp ships with a gross tonnage of 32000; 150 tons of tugboats; 9 wooden barges; and 4 steel barges. The line has under construction six tramp ships with a gross tonnage of 47,000; two oil burning ships of 6,500 tons each; and twenty steel barges.

The remarkable development of the Line under the most difficult circumstances is a good proof that from the very beginning it has been a greatly needed connecting link between Norway and the United States. Further enlarging its field of operations the company recently started a new route to Canada in cooperation with the Canadian Pacific Railway. The Canadian terminals are Montreal in the summer and St. Johns in the winter.

Under its wise management the Line will undoubtedly maintain its prestige as the best connecting link between Norway and America. The chief office of the company is in Kristiana, Norway, with American headquarters located at 8 Bridge street, New York City, under the management of Mr. A. F. Jones.



S. S. STAVANGERFJORD

Of the Norwegian-American Line

PACIFIC STEAM NAVIGATION CO.

FEW steamship lines have had a more remarkable beginning than the Pacific Steam Navigation Company, the pioneer line in the South American west coast trade. Established in 1839, and starting with a small fleet of paddle-wheel and sail steamers this company has witnessed every stage of subsequent steamship development, and today, with its affiliated company, the Royal Mail, it has services and connections extending to every part of the South American coast, to New York, Southampton and Liverpool.

Strangely enough, this typically English shipping organization owed its origin to the forcefulness and vision of an American, Captain William Wheelwright, its promoter, having been a native of Newburyport, Mass. After being employed for some years as master of a sailing ship in the South American trade, Captain Wheelwright settled in Argentina in 1820, and afterwards lived in Chile and Peru, where he established a line of sailing vessels between Valparaiso, Callao and Panama. Subsequently he was appointed United States consul at Guyaquil.

In 1836 Captain Wheelwright obtained concessions for steamship navigation, with port privileges, from Chile, Peru and other west coast republics and went to Washington with the idea of enlisting the support of the United States government. His scheme, however, was regarded as visionary and received no encouragement from department officials or members of Congress. Having been rejected in his own country, he went to London, where he gained the assistance of the Hon. Peter Scarlett, whom he had known in South America. Mr. Scarlett succeeded in interesting his brother, Lord Abinger, and other influential men, and plans were made for organizing a company. In addition to establishing a service along the Pacific coast of South America, ultimately designed to extend from Valparaiso to Panama, a system of communication across the isthmus was considered.

In 1839 the Pacific Steam Navigation Company was incorporated under a royal charter with a capital of £250,000. The first steamer, the Peru, made the initial voyage from Liverpool to Valparaiso in September, 1840. Captain Wheelwright returned to South America on this vessel, having been appointed superintendent for the company at Pacific ports. Several steamers were added to the fleet in following years and in 1845 the company extended its services from Valparaiso to Panama. Four years later the Royal Mail Steam Packet Co. established a canoe and mule service across the isthmus, with which the trans-Atlantic vessels of that company co-operated, while the P. S. N. Co. formed the link on the western coast. In later years this was replaced by the isthmian railroad. Today the company's steamers operate through the Panama Canal.

Captain Wheelwright, it may be added, retired from the company in 1854 after seeing the enterprise firmly established as a brilliant commercial success. He engaged in railroad construction in Argentina for over fifteen years, but his health having failed, he subsequently went to England, where he died in 1873.

From the early years of the last century to the present day the Pacific Steam Navigation Co. has kept pace with the remarkable developments that have occurred in all parts of South America. It has, moreover, kept in line with every stage of steamship improvement and has been able to maintain its lead in the South American trade, not only in the passenger service but also in cargo carrying.

At the present time the company has a regular service of "0" steamers from Liverpool, via Spanish and Portuguese ports, to Brazil and the River Plate, the Falkland Islands, Punta Arenas and the principal ports in Chile and Peru, returning to Liverpool through the Panama Canal. There is also a service from Liverpool to Spanish ports and Havana, and via the Panama Canal to ports in Peru and Chile, returning by the same route. The company has two services out of New York to the west coast of South America via the Panama Canal. The "E" steamers run to Havana and the principal ports in Peru and Chile, the "Q" boats to ports in Columbia and Ecuador.

Since its establishment, the head offices of the Pacific Steam Navigation Company have been in London. It has been represented in New York for about twenty years by Sanderson & Son, 26 Broadway.

HARRIS, MAGILL & CO., Inc.

HARRIS, MAGILL & CO., INC., was incorporated in the State of New York in 1916. Since its incorporation the company has been actively engaged in the steamship business, with main offices at 35 South William Street, New York City.

The concern maintains offices at New York, Norfolk, Philadelphia and Savannah. From Norfolk and Philadelphia, in addition to acting as agents for some of the world's largest private owners of tonnage, the company operates a service to Avonmouth, Bristol and Manchester for the U. S. Shipping Board.

BOWRING & COMPANY

THE name of Bowring's has been associated with important maritime interests for more than a century and now through the firm of Bowring & Company, is prominent in New York, being largely engaged as shipbrokers, steamship agents and general exporters and importers.

The original Bowring enterprise was that of Bowring Brothers which was started in St. John's, Newfoundland, by Benjamin Bowring in 1811. The New York house was established in 1866 as Bowring & Archibald by William B. Bowring (afterwards Sir William B. Bowring, Bart.) and Brenton Archibald, son of Sir Edward Archibald who was, at that time, British Consul General at New York.

The firm was established to do business with the Newfoundland house and for a considerable time confined its attention exclusively to the exporting and importing of Newfoundland products. Later, however, the firm went into the petroleum business, in which Bowring & Archibald were pioneers and they were one of the first shippers of a full cargo of barreled oil to England and among the earliest developers of tank steamers especially built for petroleum shipments.

The English firm of C. T. Bowring & Co., Ltd., was founded in Liverpool in 1830 and were originally very large owners of sailing vessels, afterward developing into steam tonnage, and because of their connection with the petroleum trade, were among the first owners of tank tonnage.

Its London house was established in 1870 and that at Cardiff, Wales, in 1892.

William B. Bowring, of the New York house, went to Liverpool in 1871 and Thomas B. Bowring (afterwards Sir Thomas B. Bowring) came to New York as the head of the house here. After the death of Mr. Brenton Archibald, Mr. Frederick C. Bowring, now Chairman of the British company, came here. Mr. Thomas B. Bowring went to London in 1892 and Mr. Lawrence Bowring Stoddart came to New York and in 1919 returned to England. In 1897 Mr. Charles W. Bowring came here.

C. T. Bowring & Company, the parent house, became a private limited company in 1899 and the New York house of Bowring & Company was incorporated under the laws of the State of New York in 1902; the Newfoundland house becoming a limited corporation under the name of Bowring Brothers, Ltd.

The New York house is owned and controlled by the parent company. Mr. Charles W. Bowring, a great grandson of Benjamin Bowring who founded the business more than a century ago, is the senior director and is also a director of the British house of C. T.

Bowring & Company, Ltd., and of Bowring Brothers, Ltd., Newfoundland. The other resident directors are Mr. Cyril Bowring, brother of Mr. Charles W. Bowring, and Mr. L. L. Richards, who was the director of the Bureau of Transportation of the War Trade Board in Washington during the war.

In 1886 the Red Cross Line was started by the Bowring interest and has since been engaged in regular freight and passenger traffic between New York, Halifax, Nova Scotia, and St. John's, Newfoundland, the New York house being the general agents for the Red Cross Line and also agents for the Bibby-Henderson Lines to Marseilles, Egypt, Ceylon, South India and Burma. They are also U. S. agents for prominent Scandinavian steamship owners and for the London house of C. T. Bowring & Company, Ltd., owners of tank and cargo steamers.

Bowring & Company do a very large business as shipbrokers specializing in both British and Scandinavian tonnage and contracting for the building of new steamers specially constructed for particular trades, largely for Canadian coal, iron and steel interests and the nitrate trade of Chile. They are still largely identified with oil shipments and during the war period were very large shippers of fuel oil to the British Admiralty and continue to carry on an extensive business in the importation of Newfoundland products, including seal products, seal skins, seal and cod oil, etc.

The steamship "Stephano" of the Red Cross Line, was torpedoed by the Submarine "U-53" off Nantucket. This was a ship especially built and strengthened for sealing. The Newfoundland house of Bowring Brothers, Ltd., are one of the largest owners of sealing steamers in the world. The steamship "Florizel," which was also specially built for ice work, has the distinction of having brought in the largest cargo of seal skins ever carried, aggregating 49,600.

The firm of Bowring & Company is backed by a century's record of sound business principles and the various departments of their business are ably organized under competent heads.

BALTIMORE & OHIO RAILROAD CO.

ONE of the most important railroad lines running out of New York and connecting with the Western gateways is the Baltimore and Ohio. This company maintains an extensive floating equipment in New York Harbor, Philadelphia and Baltimore. In active charge of this equipment, for the past twenty-six years, has been a man well versed in all matters pertaining to transportation—James H. Clark.

Captain Clark was born in Smithtown, Long Island, June 22, 1864, the son of John and Mary (Phalon) Clark. He received his education in the public schools, Coopers Institute of New York City and by serving an apprenticeship with the New York Iron Works and Engine Builders, after which he found himself qualified as a mechanical engineer, with a slight leaning toward marine construction.

Mr. Clark became connected with the West Shore Railroad as Chief Engineer of Ferries from 1884 to 1888, and in October of 1888 he entered the ranks of the Baltimore & Ohio Railroad and Staten Island Rapid Transit R. R., serving in the capacity of Engineer of Ferries, Master Mechanic, Superintendent, of the S. I. R. T. Ry., and as Asst. Supt. B. & O. R. R. New York Terminals, and General Superintendent of the S. I. R. T. Ry. In 1913 Mr. Clark was placed in sole control of all floating equipment pertaining to the Baltimore & Ohio Railroad Co.

Mr. Clark entered the service of the B. & O. R. R. as an official and for 32 years has continued, always as an official of the company, during which time his knowledge of harbor transportation as well as railroad management has given him a place in the front ranks of men foremost in commercial transportation. During his career with the B. & O. R. R. he served his superiors with a marked degree of both efficiency and loyalty, and ruled his subordinates without seeming to, so that his present hosts of friends number those from both sides of the fence, not one of whom but would be guided by his least suggestion.

Mr. Clark is a member of all traffic organizations and Railroad Clubs and several yacht clubs, as well as the Staten Island Club, Lotus Club, Engineers Club, Friendly Sons of St. Patrick, K. of C. Catholic Club of N. Y.; Baltimore Country Club, Baltimore Athletic Club and Merchant's Club. He holds an unlimited tonnage license of Master for lake, bays and sounds, as well as a Chief Engineer's licenses covering the same, and in his present position, when anything arises when a decision is needed imperatively, it is always the "Chief" that shoulders the burden.

JAMES W. ELWELL & CO., Inc.

THIS firm was founded in Bath, Maine, by Mr. John Elwell in 1821. During the first ten years of trading, small schooners were used in the West Indies trade and Mr. Elwell, being a merchant, dealt largely in broadcloths and other dry goods, crockery, hardware and provisions. Imports consisted of Jamaica rum, shooks of superior quality and other West Indian products. During these first ten years, Mr. Elwell extended his business, and in 1831 the business was established in New York, an office being opened at 57 South street.

In 1838 Mr. Elwell took in his son, the late James W. Elwell, as junior partner, and in 1847, owing to the death of his father, James W. became the head of the firm. A few years later a younger brother of James and the bookkeeper of the old firm were admitted to partnership.

After remaining nearly half a century at No. 57 South street, the business of James W. Elwell & Co. was removed to No. 47 South street. The wonderful energy, ability and integrity of Mr. James W. Elwell resulted in the growth of the business, and in 1886 the firm became agents of the Fabre Line of freight and passenger steamers between Mediterranean ports and New York. This business has grown extensively, and is now the most important Line out of New York to the Mediterranean.

In May of last year, in order to perpetuate the name, the business was incorporated under the laws of this State, with a capitalization of $1,000,000, the only change being in the addition of the word "Incorporated" to the title at which time Mr. Howard E. Jones was elected President, Mr. Harvey G. Perine Vice-President, Rodrique Joly, Treasurer, and Robert W. Swanson, Secretary.

Of these gentlemen it may be said that Mr. Perine has been with the concern over thirty-three years, Mr. Jolly for nineteen years, and Mr. Swanson about two years.

GARCIA & DIAZ

ONE of the most successful Spanish shipping concerns in the United States in relation to the comparatively short time they have been in business is the firm of Garcia & Diaz, with offices at 59-61 Pearl Street.

The firm was originally established by Manuel Diaz, one of the widest awake, most progressive and far-seeing of the present generation of younger Spanish business men, who, at a time when cargo space was eagerly sought all over the world, succeeded in interesting several of the largest Spanish ship owners to send their steamers to the States, and in a short time Mr. Diaz' office became the clearing house for the chartering of Spanish steamers in the port of New York.

At the beginning of the year 1919 the volume of business had increased to such an extent that Mr. Diaz, in order to render the service that would meet the standard that he had set up to that time, found it necessary to look for an associate, and in June of that year he became associated with Marcelino Garcia under the present firm name of Garcia & Diaz.

Mr. Diaz considered himself very fortunate in interesting Mr. Garcia as a co-partner, for, to his conviction, no other man could have filled the gap to better advantage, as has been proven by the continued success of the firm, due in great part to his intelligent and active co-operation.

Shortly after the inception of the co-partnership they established a regular line of cargo steamers with monthly sailings from New York to all ports in Spain, and, following the policy to which the success of the business is attributed, that is, the furnishing of the best service possible, their line now ranks second to none in the Spanish trade.

Today the firm of Garcia & Diaz maintains a bi-monthly service to all ports in Spain and may be considered one of the best equipped to render the service that spells continued success.

COSTON SIGNAL COMPANY

THE dangers of the sea have been much diminished by modern science and invention in the line of preventive devices, and especially life-saving appliances, the manufacture of which has been developed to a high degree of perfection. The Coston Signal Company of 57-59 Front street, New York, has been a leading factor in this development.

The business now conducted under that name was established in 1840 by Benjamin Franklin Coston, inventor and manufacturer of night signals and ship rockets. The founder conducted the business until his son, William F. Coston, became of age some time in the sixties, and took active charge of the business. The business was developed under his management, and several life-saving appliances were added to the specialties of the firm. He continued at the head of the business until his death in 1901, in which year the business was incorporated, his widow, Mrs. Anna L. Coston, being the president of the corporation and having the active executive direction of the business until 1907, when she retired from active participation in the business, and is at present vice-president and a director of the company in an advisory capacity, and Mr. Jay W. Becherer became president of the company in which office he remains. Under his management the business has been expanded so as to include, in addition to the company's own life-saving specialties and signals, a general business as dealers in a complete line of life-saving appliances for steamers, together with general steamship supplies and ship chandlery business, under the trade name of Coston Supply Company.

Of their specialties, Coston Night Signals have for over seventy years established a standard of excellence and reliability never approached by any competitor. They have been officially adopted by the United States Government in all branches of its service, and generally by the merchant marine of most countries. Coston Distress Outfits consist of twelve red signals, each burning two minutes, properly packed in a metallic watertight case, and are among the articles required by the United States Steamboat Inspection Service in the equipment of life-boats. The Coston Ship Rockets, rising to a height of over 400 feet and throwing a shower of red balls that burn with great intensity are in wide use by ocean liners and other steamship lines and are standard everywhere; the Coston Life Buoy Water Light, approved by the United States Board of Supervising Inspectors, Department of Commerce, and by the British Board of Trade, and the Coston Deck Flare; Coston Life Boat Equipment

(including oars, bread breakers, and water breakers, sails, sea drags and oil spreader, cork rings, day distress signals and life preservers), Compass, Lanterns, Boat Hooks, etc.

The Coston Davit Turning Out Gear can be attached to any round bar Davit, and in many ways simplifies and makes safe the operation of the davit in every emergency. It has been approved by engineers, classification societies and the United States Steamboat Inspection Service, and has been installed on a large number of ocean and coastwise vessels, including those of many of the largest lines. The Coston Positive Boat Releasing Gear, with its absolute safety of operation, elimination of danger of boat being detached by accidental movement during launching, quick instantaneous release at any desired point of launching of boat under complete control of one man in charge of the boat, and many other features of safe and positive action, is in highest degree simple, safe, and absolutely foolproof.

The Coston Line Throwing Gun, mounted on steel carriage for farger vessels, and in shoulder gun type for vessels under 300 tons, Coston Collapsible Lifeboats, besides Metallic Life Boats and Metallic Cylinder Life Rafts and lifeboat equipment of every kind to comply with the Seaman's Act are included in their line. The company also handles deck, engine and cabin stores and Steamship supplies in general.

In its specialties the company does a large domestic and export business, and constantly fills large orders for the United States Navy and also for the United States Army Transport Service. High merit in their life-saving specialties have made them standard equipment for vessels of the best class.

NORDDEUTSCHER LLOYD, BREMEN

ESTABLISHED 1857 with a capital equalling $3,000,000. As the first steamer, the "Bremen" of 700 Hp. and 2,000 Register Tons, departed from Bremerhaven June 19, 1858, reaching New York July 4th. Three additional steamers of similar type were placed in service in the course of the year. In spite of severe setbacks caused by financial crises in the first few years of its existence, the Lloyd succeeded in creating a fleet of eight steamers, the "New York," "Hansa," "Amerika," "Hermann," "Deutschland," "Union" and "Weser" so that in 1867 a regular weekly passenger, mail and freight service with what for these times were considered large and fast steamers, could be maintained between Bremen and New York. In the same year the Bremen-Baltimore service was inaugurated with two 2,200-tons steamers, which was followed in 1869 by the Bremen-Havana-New Orleans and the Galveston service. In 1881 the company entered a new era in starting a fast express service with the steamer "Elbe," to be followed by the "Werra," "Fulda," "Eider," "Ems," "Aller," "Trae," "Saale," and "Lahn" of about 9,000 Hp. and 5,350 Register Tons the "Spree" and "Havel" of 12,500 Hp. and 7,000 Tons, so that in 1892 the company's steamers made 92 round trips between Bremen and New York, and 41 round trips between Bremen and Baltimore. In 1891 the steamers "Werra" and "Fulda" were placed in the Mediterranean service, laying the foundation to a line which eventually proved a valuable asset to the company.

On February 20, 1882, 25 years after so modest beginnings, the North German Lloyd fleet consisted of 29 transatlantic steamers, 7 steamers plying between European ports, 14 river steamers and 48 lighters of a total of 104,500 register tons. The passenger, mail and freight service to East Asia and Australia was opened in 1886, with branch lines to Japan and Korea, as well as to Samoa and Tonge Isle, which necessitated a considerable increase of the tonnage. Available space will not permit going too much into details, but we must not fail to mention the advent of the so-called "Barbarossa" class of steamers, a revelation to the travelling public, with their superstructure, permitting the placing of cabins and social rooms in the upper decks, giving them free access to the sea-breezes and thus securing fresh air and ventilation to an extent heretofore unknown, and eliminating the sickening "ship smell" so feared by the average voyager.

With the arrival of the express steamers "Kaiser Wilhelm der Grosse," "Kronprinz Wilhelm," "Kaiser Wilhelm II," and "Kronprinzessin Cecelie," and the steamer "George Washington," all

still well known and remembered by the travelling public, the company possessed a fleet of steamers unsurpassed by any line, and for years stood at the head of all of them in the carrying of passengers in all classes between United States ports and Europe, landing in New York alone in the year 1913, in 147 trips, 18,348 first class, 35,130 second class, and 164,536 third class passengers. The outbreak of the World War in 1914, with its consequences, has proved a severe blow to this proud company. Under the peace treaty all steamers above 1,600 tons had to be delivered to the Allies, destroying with one stroke the fruit of 57 years of hard but successful labor and leaving the North German Lloyd in a totally crippled condition. Hanseatic pluck and spirit does not know defeat and, although the beginning must naturally be small and modest, as in 1857, the time is probably not far off when we will see the Lloyd flag, Key and Anchor and wreath of Oak Leaves, appear again in our port.

CORY MANN GEORGE CORPORATION

THIS company, incorporated under the laws of the State of New York in May, 1919, are large suppliers of bunker coals in the port of New York; in fact their ability to supply unlimited quantities of the best grades of coal at the principle ports of the Eastern hemisphere has placed this company among the recognized leaders in exporting coal and American bunkering.

This company is the American representative for the British firms of Wm. Cory & Son, Ltd., and Mann, George & Co., Ltd. These companies, while separate organizations, together operate, each, in their special line as coal exporters, foreign coaling contractors, coal depot proprietors, fuel oil contractors, and steamship brokers. They are contractors to the British Admiralty and other Navies and the principle steamship lines.

With these connections, Cory Mann George Corporation becomes allied to what is probably the world's largest coal exporting and bunkering organization.

Mr. E. D. Enney is the President and principle executive, assisted by Wm. Shirden, Secretary, H. W. Frey, Treasurer, and J. W. Darville, General Sales Manager, with general offices at 26 Beaver Street, New York City. Branch offices are located in the Royster Bldg., Norfolk, Va., Hogshire Bldg., Newport News, Va., 1202 Garrett Bldg., Baltimore, Md., and 121 Walnut Street, Philadelphia, Pa.

S. S. KRONPRINZESSEN CECELIE

of the North German Lloyd fleet entering New York harbor on her maiden voyage

TALBOT, BIRD & COMPANY, Inc.

TALBOT, BIRD & COMPANY, INC., was incorporated June 1st, 1916, and succeeded the firm of Talbot, Bird & Company which was organized about 1912 by James A. Alexander, John M. Talbot and Samuel Bird; and represented the Marine Department of the Ætna Insurance Company.

Talbot, Bird & Co., Inc., are now marine underwriters and general managers for the Ætna Insurance Co. of Hartford, Conn., Franklin Fire Insurance Co. of Philadelphia, Springfield Fire & Marine Insurance Co. of Springfield, Mass., and the Universal Insurance Co. of Newark, N. J.

The scope of the corporation's underwriting on hulls and cargoes extends to risks throughout the world, agents representing them for the settlement and payment of claims at all the principal ports.

Talbot, Bird & Co., Inc., have always been recognized and known in marine insurance circles for their sense of justice in the matter of disputed claims and the leniency in which these have been disposed of without recourse to law. They take a just pride in their reputation for prompt settlement of claims, which is the all important feature in its relation to merchants engaged in the export and import business, and foreign trade in general.

The present officers of Talbot, Bird & Co., Inc., are:

Samuel Bird, President; R. A. Fulton, Vice President; Harry Bird, Secretary.

The Board of Directors is as follows:

Samuel Bird, R. A. Fulton, Harry Bird, F. S. Bowen, J. S. Gilbertson, J. T. Byrne, G. W. McIndoe.

Mr. Samuel Bird is in charge of the underwriting and general finances. Mr. Harry Bird and Mr. Gilbertson are in charge of the claims department of hulls and cargoes. Mr. Gilbertson is chairman of the Average Adjusters Association of the United States, and a recognized authority on marine claims and adjustments. Mr. Harry Bird is also Vice President of the Board of Underwriters of New York.

All the officers and Directors are engaged actively in the underwriting, loss and financial departments of the corporation, which gives them a strong organization for the maintenance of an important branch of America's foreign trade.

THE FREDERICK SNARE CORPORATION

WHATEVER the craft that bears him, the wayfarer on the waters of New York Harbor will find it impossible to avoid contact with one or other of the many harbor works which in the course of the past twenty-one years have arisen under the hand of Frederick Snare Corporation, formerly known as The Snare and Triest Company.

If he enters the harbor as passenger on an ocean liner his gaze will rest on the spacious wharves and the outstanding ferry terminal at Staten Island, on the more distant wharves along the Brooklyn shore, on the teeming city piers along the Hudson, and when his ship is safely berthed and he passes over the gangplank he will find himself on the spacious deck of a modern structure where meet the tides of travel from all parts of the globe. The ferry terminal and some of those wharves he viewed at Staten Island, many of those he saw in the Brooklyn distance and along the Hudson, and in all likelihood the very wharf at which he lands—all these were reared by the constructive skill of Frederick Snare Corporation.

Should our wayfarer approach the City from Long Island Sound his interest will center largely in the succession of stately views of the bridges spanning the East River. He will pass under five of these wonderful highways. To all of these except the Manhattan Bridge, the Frederick Snare Corporation has contributed important construction work, and in the case of one, the Williamsburgh Bridge, it successfully rebuilt and reinforced important parts of the structure, increasing its strength and capacity, with no interruption to traffic.

Some of the wharves and sea walls he will pass along the East River are also evidences of the activities of Frederick Snare Corporation, for many of these have been built or remodeled by it.

By whatever channel the wayfarer reaches his destination, the Narrows, the Hudson, the East River, the Harlem he will view the works of Frederick Snare Corporation. Piers and warehouses bordering the Narrows, the Staten Island Ferry Terminals at St. George and the Battery, the Lackawanna Ferry Terminal, the Chelsea Steamship Piers, the bridges and wharves of the East River and the Harlem—all evidences of intelligent constructive enterprise, which has developed into an important industry and has very materially aided in the development of those port facilities so necessary for the harbor of New York.

WEST INDIA STEAMSHIP COMPANY

THE WEST INDIA STEAMSHIP COMPANY is the outgrowth of the shipping business founded by Daniel Bacon in New York City in 1885. Daniel Bacon is the son of the late D. G. Bacon, owner of a number of famous American clipper ships that carried the American flag on the high seas about the middle of the last century. Amongst these were the "Phantom," "Queen of the East" and the "Game Cock," which latter ship still holds a number of Pacific ocean records.

Mr. Bacon started his shipping career as a freight broker, but later he owned and operated during the years 1890 to 1900 the ship "Hoogley" and the barks "Pilgrim" and "Fred P. Litchfield." He also operated a line to Red Sea ports and Bombay, loading chartered vessels on the berth with case oil and general cargo for these ports.

By 1900 these previous ventures had been succeeded by the ownership and operation of the Steamships "Fortuna," "Caribbee" and "Banes" and the operation of a fleet of foreign steamships under time charters, and while these chartered vessels were occasionally despatched to European ports, their chief trade was between the United States and West Indian, Central and South American ports. Commencing with an occasional "round trip" and building up business gradually into a regular service with many yearly contracts for the carriage of hundreds of thousands of tons of coal, sugar, sisal, lumber and similar bulk cargoes, the business was incorporated in 1904 as the West India Steamship Company, under which trade name it continued to expand, until from 1910 until the time of the armistice, the Company was operating continuously 35 to 40 steamships in the West India trade. In the meantime, Mr. Bacon had established an office in Havana, Cuba, which besides acting as agent for the West India Steamship Company, has also had for many years the agency of Messrs. Elder, Dempster & Co., Liverpool, Nippon Yusen Kaisha and several other steamship companies.

In 1888 Mr. Bacon became the New York agent for Elder, Dempster & Co., and has continued to act as such ever since, representing this firm in the operation of their Line from New York to West Coast of Africa.

LIGHTERAGE—ITS FUNCTION

THE important part that lighterage plays in the maintenance of New York's supremacy as a port to say nothing of its position as a manufacturing and mercantile center is little realized by the average person.

It was not until the Harbor Strike in the spring of 1919 that this was forcibly impressed upon the citizens of New York when the food supply of the city was seriously imperilled and the subways, elevated roads, surface railroads and lighting plants were only saved from a complete shut-down for lack of fuel by the manning of some tied-up tugs by volunteer crews of owners.

When every day spent in port by a ship meant the prolonging of the War, it was lighters that made it possible to reduce the time of ships in port to a minimum by their use as auxiliaries for overcrowded wharves and enabling ships to work the maximum number of gangs offshore and inshore at the same time.

The functions of lighters are many in the port of New York. They are as shuttles ceaselessly darting to and fro in the loom of commerce. Ships arriving in New York from all parts of the world bring merchandise for trans-shipment by ships departing for various parts of the world—and this movement from ship to ship employs an ever-increasing fleet of lighters. The many manufacturing enterprises situated on and near the waterfront are so located to make it possible to receive raw material and ship manufactures by lighter direct from ship to factory and vice versa, and the extensive warehouse system of the Port is to a great extent dependent upon lighterage service for its maintenance.

The physical characteristics of the Port, making it largely dependent upon water transportation for its supplies of food and fuel has been responsible for the development of the most highly organized system of inland water transportation in the World. In this development Captain Frederick William Jarvis was a pioneer, having established the business of the Jarvis Lighterage Company, as a public lighterman, just after the close of the Civil War in 1866. A list of the customers of Captain Jarvis, who are still being served by this company, includes the names of many of the largest and most successful merchants and manufacturers in the Metropolitan District.

The Jarvis Lighterage Company was purchased in 1911 by H. M. Lee and William Simmons, the former having established the business of Lee's Lighters in 1899, and the latter, the business of the Simmons Transportation Company 1902. In January, 1921, the operation of these three companies was consolidated under the management of Lee & Simmons, Inc., thus bringing into being the

largest plant and organization of its kind devoted exclusively to the service of the shipping public of the Port and tributary inland waters.

Henry H. Lee, the father of H. M. Lee, has been engaged in the Steam Hoisting and Towing business in the Port of New York since the late seventies, under the corporate title of H. H. Lee Company and Lee's Towing Line, Inc.

SIR WILLIAM REARDON SMITH & SONS, Ltd.

IN a work of this nature, which undertakes to portray the interesting sidelights of business romance in a series of historical sketches of firms and individuals who have grown and developed co-incident with our port, it may not be amiss to give mention to the new blood, energy, and brains that is ever being drawn from the four corners of the earth to partake of the wonderful opportunities here presented and to further enhance the fast growing reputation of New York as the nerve center of world commerce. Such action on the part of men who have been the leaders of maritime interests in other ports is their acknowledgment that this is the coming maritime capital of the world, as it is fast growing to be the financial capital.

Of such men, there is none perhaps, whose coming has such a significance in this direction as Sir William Reardon Smith, Bart., of Cardiff, Wales. Sir William has achieved notable success in the maritime affairs of his native land and comes to the great port of the New World amply qualified by experience and ability to take the same commanding position in his new sphere of activity. He is the head of the following English concerns with offices in both Cardiff and London, viz., the St. Just S. S. Co., Ltd.; the Devon Mutual Insurance Co., Ltd.; the Leeds Shipping Co., Ltd.; and the Cornborough Shipping Line, Ltd. The total tonnage of the fleets under his direction is in excess of 300,000. Associated with him in the management of his large interests are his two sons, William and Douglas, and his two sons-in-law, Mr. A. J. Popham and Mr. W. G. Liley.

Sir William's American interests are conducted under the firm name of Sir William Reardon Smith & Sons, Ltd., and offices are maintained at 44 Beaver street, New York City, with Mr. W. G. Liley in charge.

THE ORIENTAL NAVIGATION CO.

A LOVE for France and the cause of the Allies during the war is responsible, perhaps, more nearly than any other factor for the origin of the Oriental Navigation Company. The stress of the Allies at the time was particularly acute at sea. It was begininng to look as though England would be isolated and starved, and without England and her fleet, victory would be certain for the German government.

When the conflagration of war overtook Europe, Mr. Philip De Ronde, now president of the Oriental Navigation Company, was extremely pro-Ally. So was his friend, Mr. Alberto Dodero, of Buenos Aires, with whom he had been associated during several years of export and import business in South America. One day in the autumn of 1915 Mr. Dodero appeared in Mr. DeRonde's New York office and bluntly proposed a steamship service to French ports, a proposition which was immediately accepted.

The commercial history is not greatly different in character from that of other companies which developed during the war, but the war history of some of its ships are interesting and involved the company in some of the most spectacular events of the war.

The first ship was the Brazilian S. S. Tropiero which made its first voyage to Havre. She sailed from New York late in 1915, arriving in Havre in January, 1916, after an adventurous voyage. About this time the world was shocked by the execution of the Englishwoman, Edith Cavell, by the Germans, and upon the return of the Tropiero to New York, the vessel was re-named the Edith Cavell. The Tropiero was subsequently sunk by a German submarine.

The S. S. Orleans gained fame as the first American steamer to sail from New York for France after the German edict of February 1, 1917, declaring unrestricted submarine warfare on all allied and neutral tonnage alike encountered in the war zone. She braved the submarine perils and arrived safely at Bordeaux on February 26, 1917, where she received enthusiastic welcome from the whole populace of Bordeaux—the day being observed as a holiday. The steamer was greeted on her arrival by all civil and military dignitaries of the town, a special medal commemorating the event was struck and presented to the captain in the presence of the American Naval attache at Paris, who, with a party of distinguished Americans, journeyed to Bordeaux to welcome the first American blockade runner. The Orleans was torpedoed and sunk on July 3, 1917.

The first armed merchantman flying the American flag was the S. S. Aztec. She was also the first armed merchantman to be sunk, being torpedoed on April 1, 1917, with a loss of twenty-nine men. The S. S. Gorizia was also sunk on April 30 of the same year.

The S. S. Guazu, the subject of the famous German "spurlos versenky" incident of the war was sold by the Oriental office of Paris after the vessel had successfully eluded the submarines and arrived in Europe. Her owners were the Messrs. Dodero Brothers of Buenos Aires, one of whom has been mentioned above.

Since the war and up to the beginning of the severe depression in shipping, 1920-21, the company expanded rapidly and operated services to Brazil and River Plate, Black Sea and the Levant, East Africa and French Atlantic ports, requiring a fleet of thirty-five ships. During 1921 new services were inaugurated between Gulf and Hamburg-Bremen and between New York and Colombia.

The company has confined its operations entirely to freight services. Among the ships owned by the company are two fruiters which are chartered to the United Fruit Company for West Indies service.

MOORE & McCORMACK CO., Inc.

MOORE & McCORMACK COMPANY, INC., a corporation organized under the laws of the State of New York prior to the World War is one of the newer American firms to become permanently established among the leading big all-American companies of our Merchant Marine. The founders of the company, Mr. Albert V. Moore and Mr. Emmet J. McCormack have been engaged all of their lives in the shipping business with headquarters in New York, and the success of the firm is due to the long experience and close application of these two men.

This company now operates a regular berth service with American flag ships between New York, Philadelphia, Baltimore, Boston and U. S. Gulf ports, to Ireland, to Scandinavia and the Baltic, to the West Indies, Mexico and the Caribbean, to the East Coast of South America, to the Mediterranean and the Levant, to India, and to West Coast of the United States.

The management of the Commercial Steamship Lines is entirely in the hands of the Moore & McCormack Company, Inc. In addition to several other general agencies, both American and foreign. Besides its home office in New York the company also has branch offices at Philadelphia, at Havana, Cuba, at Cork, Ireland, and at Gothenburg, Sweden with well established agencies at all other ports of call.

When the United States Shipping Board started the United States Lines as a great trans-Atlantic passenger service Moore & McCormack Co., Inc., was selected as one of the three representative New York companies to whom its management was entrusted.

PHILIP DE RONDE

President of the Oriental Navigation Company

THE NIPPON YUSEN KAISHA

(Japan Mail Steamship Co.)

THIS great Japanese company was established in 1885 and today is considered Japan's foremost marine transportation company. It was the result of an amalgamation of two separate concerns, namely, the Kyodo Unyo Kaisha (Union Transport Co.) and the Mitsu-bishi Kaisha (The Three Diamonds Company.) The company was then capitalized at Yen 11,000,000 and the fleet comprised 58 steamers, approximately 69,000 tons. Today the fleet numbers 103 vessels with an aggregate of 500,000 gross tons and its steamers encircle the globe.

At first the company confined its activities to the coastal trade, later extending its operations to Korea, North China and Vladivostock, and in 1893 inaugurated its first regular ocean service to and from Bombay, thus materially aiding the growth of the cotton industry in Japan.

In 1896 it extended its activities to foreign waters, increased its capital to Yen 22,000,000, started the construction of twelve new steamers and established three main lines of passenger and freight service; i. e., the European, American and Australian lines, all of the steamers of these lines running under mail contract with the Japanese Government.

In the year 1914, with the advent of the great world cataclysm, the company's extra freight steamers of the European Line began to operate from Europe to New York by way of the Atlantic, returning to Japan by way of the Pacific, through the Panama Canal, completing a round the world voyage. During this period the part played by the Nippon Yusen Kaisha for the cause of the Allies during the great European war was by no means insignificant. Foremost among its contributions was the maintaining of the regular fortnightly Japan-Europe Mail Service and the dispatch of frequent auxiliary steamers throughout the continuance of the war. This undertaking entailed heavy risks to the Nippon Yusen Kaisha, resulting in the sinking of four mail steamers, including the Yasaka Maru, one of the finest ships, besides a new cargo carrier. In addition to this eight of the company's steamers were allocated to the United States for service in carrying food-stuffs and war materials to the Allies.

In 1915 the capital of the company was increased to Yen 44,000,000, and in 1916 a regular four weekly freight service was opened between the Far East and New York via the Panama Canal.

In 1918 the Calcutta-New York freight line was established and the company's capital increased to Yen 100,000,000.

While the Nippon Yusen Kaisha now has a magnificent fleet of 500,000 tons gross as previously mentioned, most of the vessels being of recent construction, the management has in the course of construction a further 500,000 tons gross which will include several steamers of fast speed and superior passenger accommodations. When the erection of this additional tonnage is completed the Nippon Yusen Kaisha will have altogether a gigantic fleet of 1,000,000 gross tons.

Baron Kondo, the late president of the company, held that office for over 25 years, and at his death, which occurred quite recently, was succeeded by Vice-President Ito.

The New York offices of the Company are located at 10 Bridge street.

THE HOUSE OF TIEBOUT

THERE is no finer example of the steady and consistent growth of a business firm built upon the right foundation than the house of W. & J. Tiebout.

Established in 1853, this firm has ever since conducted its business in the immediate neighborhood of its present address, 118 Chambers Street, led by four generations of Tiebouts in succession. The present heads of the firm are John Tiebout, Sr., and John Tiebout, Jr.

Intelligent study of the requirements of the marine field, combined with a policy of offering only the best quality products at the lowest prices consistent thereto, have commanded such universal recognition that the house of Tiebout is now the port of call of seafaring men.

The complete range of all kinds of marine hardware, fittings, joiner equipment, etc., combined with immediate delivery on short notice, has stood the test of so many emergency calls that it has become a common saying among men using marine equipment, "Go to Tiebout first."

A distinctive feature of the Tiebout line is the complete assortment of ship-finish hardware particularly suitable to work boats.

For those desiring assistance in the selection of marine hardware, fittings and supplies, a complete illustrated catalog has been prepared. It will be sent upon request to those interested.

CHAS. D. DURKEE & CO.

CHARLES D. DURKEE & COMPANY succeeded the firm of Rankin & Durkee in 1893—Rankin & Durkee having been the successors to a firm established about one hundred years ago in the ship supply business.

When Charles D. Durkee & Company took the tiller, the firm was located at 26 South Street, near Coenties Slip. The business grew each year under the direct management of Charles D. Durkee and William H. Durkee, his brother, until the quarters at No. 26 became too cramped for the expanding business and a contract was made in 1899 for the building of the present home of the Company at 2 and 3 South Street. The building was completed and fixtures installed by November, 1899, and on Thanksgiving Eve, 1899, the Company gave a reception and opening to several hundred friends and customers and the Trade in general. An entertainment was furnished, a dinner served to over five hundred diners, and dancing was enjoyed until the early hours of Thanksgiving morning.

Active business started in the splendid store and building on January first, 1900, and the business kept up its growth and increasing list of customers right up to the late war.

When the war started the firm was immediately called upon to rush equipments for submarine chasers, the Emergency Fleet and Navy orders. They received which to that time was the largest single order ever placed in the Marine hardware line, an order for twenty thousand portlights for the equipment of the 550 85-foot submarine chasers, built for the English Government by the Elco Company of Bayonne, N. J. This company under their President, Mr. H. R. Sutphen did what was thought by many to be an impossible task. The building of these 550 chasers in 500 days. One of the historical events of the War, and which Charles D. Durkee & Company felt proud to have had a hand in accomplishing. The plant was kept rushed to the limit during the War with government emergency work which it was well equipped to handle.

In November 1919, Charles D. and William H. Durkee retired from the firm and the business is now under the active management of Mr. Fred H. Fricke, who was many years with the old firm. Mr. Fricke is assisted by Mr. Henry Blossy and many employees that served their time with the old firm, and all are working together to meet the adjustments made necessary by past war conditions.

C. D. MALLORY & CO., Inc.

ONE of the younger companies, comprised of "Old Heads," at the business in the port of New York, is C. D. Mallory & Co., Inc. The president of this organization, Mr. Clifford D. Mallory, comes of a family long associated with ship operations and shipbuilding of the country, and spent, what might be termed an apprenticeship, with the Clyde-Mallory interest.

Associated with this organization as vice-president, is Mr. W. S. Houston, who had his training in Scotland and Brazil, and for quite a period in the United States prior to combination of his interests with those of Mr. Mallory in the formation of their company.

Operators for quite a period of Shipping Board Tonnage, being tramped, world wide, their business has developed along the lines of many of the larger shipping organizations of the United Kingdom; that is, they are essentially managers of vessels. This phase of their business principally covers the activities of a fleet of six tankers, all of the largest size and latest type, with which they are, engaged in transporting oil in various directions. Further, they are managers of the fleet of six owned and chartered tankers, engaged in the transportation of molasses and oil to all sections of the world. The centering of the management of this tonnage with this relative newcomer in New York shipping circles means certain development of allied activities; for instance, a chartering department with prominent connections abroad is in full swing.

The company's activity has called for establishment of several branch houses at American and foreign ports, amongst which are included Baltimore, Norfolk, New Orleans, Galveston, Tampico, and at Glasgow for the United Kingdom, and Genoa, Italy, for the Mediterranean.

This Company representing, as New York agents, many outport shipping operators, are experiencing great success with the homeward business of the Baltimore-Oceanic Steamship Co., which maintains a general cargo service between North Atlantic Ports and Mediterranean destinations. The careful attention displayed in connection with this inward business points to its relatively certain continuation, and the visits of the Baltimore-Oceanic vessels to New York means better service to fruit, onion and general cargo receivers. Incidentally, considerable disbursements with New York houses allied with the shipping industry accrue.

The Company, since its organization, has followed a policy of conservatism, marked in a time of lavish outlays for office space, accessories and the like, and has devoted its entire attention to busi-

ness in hand, rather than to "putting up a front," and based on such a sound principle even through "hard times" can report satisfactory progress. Its slogan since its inauguration has been, and will continue to be, "First, last and all the time, *Service.*"

BLACK DIAMOND STEAMSHIP CORPORATION

THE BLACK DIAMOND STEAMSHIP CORPORATION is an American company that has sprung into being with the advent of the new merchant marine. It is a company that has every appearance of being wisely and efficiently managed, and this explains the success with which it is weathering the slump in freight rates which has so seriously affected a considerable number of new American steamship lines and has proven a hardship to a number of the old ones.

The Black Diamond Steamship Corporation holds its charter under the laws of the State of New Jersey and has established a cargo liner service between New York and Antwerp and Rotterdam, which has more latterly been extended to the ports of Hampton Roads, Philadelphia and Boston.

While comparatiely young this company has been built on a firm foundation, as is shown by the rapidity of its advance to a leading position in the trade routes it now covers, operating at the present time a fleet of steel steamships. The Black Diamond Steamship Corporation conducts a berth business between American ports and Antwerp and Rotterdam, besides which it charters ships for tramp business to all parts of the world. The officers of the company, to whom its success should be properly attributed, are:

J. E. Dockendorff, President; Lewis Iselin, Vice-President; F. E. Huck, Vice-President and Traffic Manager; V. J. Sudman, Treasurer; B. A. Harnett, Operating Manager; S. H. Magrill, General Freight Agent.

The general executive offices of the company are located at 67 Exchange Place, this city. In addition it has offices at Chicago, Ill., at No. 35 North Dearborn St., and in Baltimore, Md., at 30 South Calvert St., Philadelphia and Norfolk.

CARIBBEAN STEAMSHIP CO., Ltd.

OF THE many American steamship companies that came into existence during the War, the Caribbean Steamship Company, Ltd., holds a unique position. It is one of the few younger companies which has established itself as a permanent and important factor in America's merchant marine.

The Company was founded in 1915 by Mr. M. G. Casseres, its directing head. It commenced operations with a chartered steamer of 1,100 tons total deadweight. As the Company met with success it gradually extended its activities and added to its fleet. Today it operates ten modern vessels, maintaining regular line services throughout the West Indies, the north and west coast of South America with connections for Central America.

Much of the Company's success has been due to its policy, from its inception, of confining its activities exclusively to the West Indies, Central and South America thereby firmly intrenching itself for the future at a time when other Lines were either forced to suspend their services on account of the War, or were attracted elsewhere by larger profits.

The Caribbean Line, as it is generally known, now maintains a regular ten day service from New York to Jamaica, B. W. I., east coast Colombian ports, thence passing through the Panama Canal to the west coast Colombian ports and Ecuador, connecting at Cristobal for west coast ports of Central America and Mexico. It also maintains a regular fortnightly service from New York to Trinidad, B. W. I.; Venezuelan ports; Curacao, D. W. I.; and Santo Domingo. In addition, it does a considerable business in the transportation of full cargoes of coal and sugar to and from the West Indies.

The objects of its founder in organizing the Caribbean Line was to operate services from the United States to every principal port in the Caribbean, and it may now be well said that this object has been fully realized, as the Company now serves regularly every port of any importance in the Caribbean region, even extending to the Pacific.

Much credit is due to Mr. Casseres, whose energy and perseverance has culminated in the building up of an American shipping enterprise which has won for itself recognition as one of the principal carrying factors in the Caribbean trade, maintaining a high standard of service. All of the steamers owned by the Company fly the American flag.

THE YBARRA LINE

THE firm of Ybarra & Company was founded by Don Jose Maria Ybarra, sixty years ago, having at that time two steamers of 300 tons each, which carried passengers and freight between Northern and Southern Spanish ports, thereby earning the name of "Vasco and Andalusian Line" of steamers. Later other and larger vessels were added and the service was extended so that weekly sailings were maintained between Bordeaux and Marseilles, calls being made at all coast ports en route.

The volume of business grew so large that it became necessary to build more vessels of a type especially constructed, embodying all the latest devices for the proper handling of cargo and prompt loading and discharging. These vessels were so well received and the service rendered so satisfactory that today the vessels of Ybarra & Company practically control the coastwise trade of Spain.

At the beginning of the World War Ybarra & Company realized the need of steamers to carry to the United States, olives, olive oil and other Spanish products, placing some of their coasters in the service. These vessels became well known to American exporters, who gave the line such good support that four boats of a type adapted to this trade, two of 6,500 tons and two of 6,000 tons were built, and now maintain semi-monthly service. At the inauguration of this service the line became known to shippers as the "Ybarra Line" and has since been so called.

Realizing the fact that very few piers in the port of New York were capable of handling the class of cargo carried, space was secured in Erie Basin and a shed erected to care for this kind of cargo. Here all facilities are given to importers for the proper examining, reconditioning and rebrining and any other accommodation that might be needed, and it is on this account that the olive and olive oil shippers from Spain prefer the Ybarra Line.

The Company is still providing added service for shippers to and from Spain, by the fact that they are building three new vessels, the first of which is to be the Steamship, Cabo Roche, of about 5,000 tons, due here about January, 1922, and to be followed by two other boats of similar class. The entire fleet of Ybarra & Company consists of thirty-three steamers.

Ybarra & Company are represented in the United States by Briones & Company, Inc., with offices at 25 Beaver Street, New York City.

THEODORE A. CRANE'S SONS COMPANY

THE firm of Theodore A. Crane's Sons Company, established in 1867, has rapidly grown and at the present time it is the fourth largest ship repair plant in the Port of New York. The plant consists of four floating drydocks with a capacity of from one to twelve thousand gross registered tons, covering approximately twenty-four acres in the heart of the Erie Basin section, South Brooklyn, New York. Its complement of machine, boiler, blacksmith and carpenter shops tend to make the plant one of the best equipped repair yards on the Atlantic seaboard. The newest addition to their machine shop is the installation of a new fifteen-foot Vertical Boring Mill.

The facilities for executing turbine, reciprocating engines, boiler and hull repairs to steel and wooden vessels are such as to insure the operators and owners prompt dispatch. The capacity of the yard is such that it will accommodate twenty or more vessels undergoing repairs at the same time.

The new drydock, consisting of four sections, will accommodate vessels up to 480 feet in length. There is 26 feet of water over a 5 foot block at any tide. This drydock was built under the direct supervision of the Crane brothers at the plant in Erie Basin. Constructed of specially selected long leaf Yellow Pine and Oak, white pine wedged, electrically operated, it is capable of lifting its maximum haul at the rate of a foot a minute. It is the third largest drydock in the Port of New York.

Since their establishment, Theodore A. Crane's Sons Company have made a specialty of building harbor craft such as lighters, barges, scows and tugboats. This is in addition to their repair work. The Yard is known as one of the best in the Port for repairs to wooden hulls of all kinds. They built the first knockdown barges ever shipped from this port for service on the West Coast of South America, building them so that they could be knocked down and re-assembled at their destination.

The executive and supervisory force consists of men well schooled in the shipbuilding and repair industry. During the world war some of the largest contracts let by the government were executed in this yard.

The officers of the company are Mr. Alfred M. Crane, President and General Manager; Mr. Jonathan Moore, Vice President; Mr. George W. McKenzie, Secretary; Mr. Walter D. Crane, Treasurer. Their New York office is located in the Cunard Building at 25 Broadway. Their agents for the United Kingdom are Messrs. Crichton, Thompson & Co., Ltd., of Liverpool, England.

THE HOBOKEN LAND AND IMPROVEMENT COMPANY

A NUMBER of years ago a gentleman—by name John Stevens —looked across the Hudson River from Manhattan Island and the first thing that struck him was the high rocky cliffs of Hoboken and he thought these would be natural barriers that would make Hoboken an ideal spot fit for country residences of the rich New Yorkers and a quiet, restful, recreation ground where the tired multitude of crowded Manhattan Island would find health and comfort.

He purchased practically all of Hoboken and settled his family on what is known as Castle Point. That was in 1784.

In 1833 John C. Stevens, Robert L. Stevens, James A. Stevens, Edwin A. Stevens (sons of the above named John Stevens) and others formed a corporation called the Hoboken Land and Improvement Company to manage the estate of the Stevens families in order to make improvements and restrict building, this conception is shown in the old town layout; in the advertisement for sale of town lots; and in the restrictions placed in the agreements for sale and deeds of lots. This Company immediately started erecting dwellings of every description and the waterfront lay unsullied in all its virgin beauty until John C. Stevens started his Perigau (sailboat) ferry from the foot of the old Philadelphia Turnpike (now Newark Street) and later by his horse power and finally steam ferry boats of the Hoboken Ferry. As this communication with Manhattan became more efficient the pleasant village of Hoboken grew under its benign influence.

The first real improvement came when Stevens built the Morris and Essex Railroad, bringing it into Hoboken through the old Erie tunnel on trackage rights from the Erie.

Next came the building of a pier for the North German Lloyd Line and shortly after a pier for the Hamburg-America Line.

Stevens also contributed a famous improvement in the shape of a shipyard where he built and rebuilt the ingenious steam floating battery for the U. S. Government and also built all of the steam ferry boats for his ferry to Barclay and Christopher Streets, New York.

So the Stevens family made Hoboken and today are still making and doing for Hoboken through the Hoboken Land and Improvement Company, which owns and controls most of the waterfront property, factories, private dwellings, semi-private dwellings, flats and apartment houses.

The following is a list of the large improvements which have been made by the Hoboken Land & Improvement Company on the waterfront:

PALMER CAMPBELL

President and General Manager Hoboken Land and Improvement Company

Two large double decked piers for the Holland America Line.

One 1,000 foot pier for the Scandinavian America Line.

Two piers built by the Lamport & Holt Line on land owned by this Company.

One large double decked pier and bulkhead built by the Ellerman's Wilson Line Ltd. on property owned by this Company.

The Hoboken Land & Improvement Company built four 12-story concrete buildings for manufacturing purposes, and built to connect the Hoboken waterfront, industries and piers with direct tracks to all trunk lines—a railroad commonly known as the Hoboken Shore Road.

MARCUS H. TRACY

CAPTAIN TRACY began his deep sea experience at the age of ten years with his father, who was a shipmaster. Born in the State of Maine with a long line of seafaring people as an inheritance, his whole life, with few interruptions, has been in connection with the sea. As President of Tracy Steamship Company during the activities of the United States Shipping Board, this Company became Managers, Operators and Agents for over 100 of their ships. He was elected a member of the Board of Pilot Commissioners by the Chamber of Commerce of the State of New York in 1913 for a term of two years. Has been re-elected to succeed himself, the last time in October, 1921. Early this year he succeeded Captain George L. Norton as chairman of the Board. His interests in maritime matters is shown in various activities, among them being chairman of the Board of Governors of the New York State Nautical School.

HOULDER, WEIR & BOYD, Inc.

FROM very small beginnings in 1901, the firm of Houlder, Weir & Boyd, Inc., has gradually developed until it is now one of the best known shipping enterprises in New York City.

The Company was incorporated as a New York corporation in 1907, and besides an extensive chartering connection in Great Britain, Scandinavia and Japan, represents many influential regular Line Services in the Far East, River Plate and Indian Trades.

They have recently become interested in the American Intercoastal Trade, representing the well-known American shipowners, Messrs. Crowell & Thurlow of Boston.

PANAMA RAILROAD STEAMSHIP LINE

THE PANAMA RAILROAD STEAMSHIP LINE is the designation of the steamship service inaugurated by the Panama Railroad Company in the early part of 1893. Its fleet consists of eight freight and passenger steamships of American registry, with a deadweight capacity of 65,000 tons, operated from New York; and two steamships and two barges, of a deadweight capacity of 44,000 tons, operated in the coal service between Hampton Roads and the Canal Zone.

The service from New York consists of weekly departures, stopping at Haiti on the outward and homeward trips, and a monthly service to the West coast ports of Colombia and Ecuador as far South as Guayaquil.

The Panama Railroad Company is a corporation organized under the laws of the State of New York, and inaugurated this steamship service in 1893 as a feeder for the Panama Railroad, which, operating across the Isthmus of Panama, was engaged in the transportation of cargo and passengers originating in Europe, and on the Atlantic coast of the United States, destined to ports on the West coast of South America, Central America, Mexico and the United States, and vice versa; it being at that time the only trade route between the United States and Central and South America other than the Cape Horn and Straits of Magellan routes.

The stock control of the Panama Railroad Company was secured by the French Panama Canal Company in the early eighties, and, when the Government of the United States purchased the assets of the French Panama Canal in 1903 in anticipation of the construction of the present Panama Canal, among those assets was the stock control of the Panama Railroad Company, and its steamship line. This naturally placed the Government of the United States in the position of operating its first railroad and its first steamship line. The Government now owns all the capital stock of the Panama Railroad Company, which includes the ownership of the Panama Railroad Steamship Line, and operates the corporation under its charter from the State of New York, through a Board of Directors selected by the Secretary of War.

The operation of the Panama Railroad Steamship Line on a regular and dependable schedule has been of inestimable benefit to the development of American commerce with ports in the Caribbean Sea, and the West coast of Central and South America and Mexico, and contributed in no small measure to the successful completion and satisfactory operation and maintenance of the Panama Canal. It is a record of steamship operation that is a credit to the American Merchant Marine.

NEW YORK CANAL AND GREAT LAKES CORPORATION

THE "GREEN FLEET" is the adopted trade name for the New York Canal and Great Lakes Corp., fleet of boats purchased from the War Department in June, 1921, consisting of 84 vessels, comprising fifteen 500 H. P., twin screw, oil fuel steamers, capable of handling 450 tons of cargo; thirty-six barges without power, capable of handling about 750 tons of cargo; two oil tank barges for fuel purposes, all of the foregoing steel construction, 150 feet long, 20 feet beam, 12 feet depth of hold, and three new, wooden barges of the same size, dimensions, and cargo capacity as the steel barges. The balance of the fleet consists of various sundry boats, for which special service has not as yet been assigned.

This fleet cost the Government, all complete, $3,694,000.00, and has largely been overhauled by the new owners and given 100% employment from the 2nd of July to the closing of navigation. It is the only fleet of boats on the canal independent of tug boats, and can, in addition to their own fleet, provide power for towing canal boats operated in competition with them and for classes of barges engaged in canal and river transportation.

When one considers what the old Erie Canal did for the New York State in the upbuilding of thrifty towns and communities, it is difficult to predict the vast possibilities of the present barge canal when existing facilities are utilized, not to mention the vast volume of business that could be profitably handled if suitable equipment was operated for the business available along the canal banks; not to mention the traffic originating in foreign countries along our own coast and destined to lake ports and Canadian ports of consumption.

The "Green Fleet" has actually made in the first four months of its operation a phenomenal record, not alone a saving to the shipper and consignee, but actual demonstrating quick and dependable service between New York and Buffalo favorably comparable with the railroad.

The old Erie mule path which accomplished such wonderful results is now referred to as the narrow gauge route compared with the modern New York barge canal complete at a cost to the taxpayers of New York State of about $165,000,000.00, with modern electric locking machinery and equipment, now referred to as the broad gauge route, traversed by the "Green Fleet" flyers, making a round trip from New York to Buffalo and back in record time.

The beautiful scenery up the Hudson and along the entire length of the canal is attracting yachtsmen, houseboats, and vacationists more and more every year and is an exceptional and economical vacation trip for the entire family.

THEODORE E. FERRIS

WHEN the United States Government wanted and needed a naval architect of unquestioned ability to prepare and supervise the plans for the great fleet of merchant ships which it undertook to build during the Great War, it was Theodore E. Ferris who was called to Washington.

Mr. Ferris comes of American stock and was born in Stamford, Conn., in 1872. He studied in and was graduated from the public and the high schools there and later went to the Greenwich Academy, where he received a technical and general education and training. The remaining years of his life have been spent in the shipbuilding industry, which he learned first practically and then theoretically. He went first to work in a shipyard on Long Island and there became acquainted with the actual labor of the construction of ships. From this plant he went to that directed by John Roach at Chester, Pa., where he was introduced to the study of drafting and designing vessels for the coasting and deep water trade. He gained additional knowledge and skill in several of the largest plants in Baltimore and Philadelphia, and then went to Chicago, Ill., and Detroit, Mich., where he widened his experience with a knowledge of the types of vessels which ply the Great Lakes.

When he was eighteen years old Mr. Ferris entered the employ of A. Cary Smith, who in his lifetime was recognized as one of the greatest of American architects. There he remained six years, developing his knowledge of nautical designing and participating in the drafting of steamboats for Long Island Sound and river traffic as well as in the planning of craft for pleasure. In 1898 he was made chief constructor for the Townsend and Downey Shipbuilding Company at Shooters Island, New York, now the Standard Shipbuilding Company. That position he retained several years. In 1903 he again became associated with Mr. Smith, but this time as a partner, a relationship which continued until Mr. Smith's death. Mr. Smith designed the New York, the first steam pilot boat, for the Sandy Hook pilots.

Between 1910 and 1918, Mr. Ferris designed and supervised the construction of more than three hundred merchant craft and pleasure boats and when he was called by the government he had thirty vessels in process of building for freight or freight and passenger service for clients in addition to several for private use. The value of these vessels was approximately $20,000,000.

Mr. Ferris' reputation is as high among foreign shipbuilders and ship operators as it is in the United States, for his work is well known in ports abroad. None but a man of his exceptional executive ability could have undertaken and successfully accomplished the task of properly supervising the construction of a thousand ships, as he did for the Emergency Fleet Corporation.

SUZUKI & COMPANY

WHILE Suzuki & Company have for many years engaged in the steamship, export, and import fields, their interest in the Port of New York became much more material and immediate in the early part of the year 1918. At this time many of the largest and most reputable Japanese steamship owners amalgamated their fleets into what is now known as "Kokusai Kisen Kabushiki Kaisha." The entire fleet was entrusted to the management and operation of Suzuki & Company. Messrs. Kawasaki Kisen Kaisha, and its affiliation, Kawasaki Dockyard Company, both of whom are internationally known as owners of a tremendous fleet and as being among the foremost shipbuilders of the world, also followed the policy of Kokusai Kisen Kaisha and entrusted their vessels to the hands of Suzuki & Company. From 1918 until the middle of 1919, these steamers were occupied mainly in tramping in the Atlantic, New York being used, up to the middle of 1919, principally as a port of discharge. At that time, with the depression in tramp freights, Messrs. Suzuki & Co. sought other outlets for their fleet of over one hundred large modern vessels. Inasmuch as their primary interest naturally lay in the Orient, a Far East service was decided upon—with New York as the basic point. The result, in service, is now well known to the shipping world. Since the middle of 1919, Messrs. Suzuki & Company have sailed approximately three boats each month from New York to Far Eastern ports.

Besides the continual sight of vessels controlled by Suzuki & Company passing in and out of the harbor, the New York Shipping world can testify to the activity of these steamers in the New York tramp market. These vessels are among the few which are worked directly in New York without control from London. The effect of this consideration is service to shippers—mainly, of course, to shippers of complete bulk cargoes. Upon this foundation of Service, the names of Suzuki & Company, Kokusai Kisen Kabushiki Kaisha, Kawasaki Dockyard and Kawasaki Kisen Kaisha have attained the respect equal to that of older and better known concerns. Inasmuch as the entire organization believes that Service is the first consideration to the entire "carrying" world, it is their intention to maintain, as in the past, this principle.

STEPHEN D. STEPHANIDIS

STEPHEN D. STEPHANIDIS, senior member of the firm of Stephanidis, Benas & Company, of 21-24 State Street, New York City, has become a strong factor in maritime affairs since 1916, in which year he entered business for himself. Both he and his partner, John M. Benas, were born in Greece, but are both naturalized citizens of the United States.

Educated at Robert College, an American institution in Constantinople, Mr. Stephanidis arrived in America in 1907. Determined to succeed, he studied at the City College by day and worked as a Y. M. C. A. librarian by night. His first thought was to practice law, and with this as his aim he commenced a course at the New York University; but upon reflection he decided upon a commercial career, whereupon he left the university and became a clerk in the office of the Trunk Line Association, where he advanced to a position of large responsibility.

During this time he also was acting as representative of the Greek Line at Ellis Island. The two positions afforded him an opportunity to gain a complete knowledge of the immigration branch of the shipping business, and he availed himself of it. With this experience as part of his assets, he formed his present partnership with Mr. Benas, who, like himself, had already been engaged in commercial pursuits in America.

The firm is managing agents for the Vigo Steamship Company, operating between New York and Italian ports, and the American Black Sea Line, operating between New York and Greece.

It was Mr. Stephanidis and his associates who owned the steamship Algonquin, which was destroyed in Germany's submarine warfare as directed against neutral shipping, and this act by Germany was the signal for the momentous declaration at Washington which resulted in the sending of our vast army overseas. Following the loss of the Algonquin the steamship Vigo was acquired by Mr. Stephanidis, and the line which he controlled was named after this ship.

The American Black Sea Line inaugurated its service to Greece in April, 1921, with the sailing of the U. S. liner, Acropolis, formerly the Kilpatrick of the U. S. Transport service. She has been renovated into a fast liner, carrying 1,200 passengers plus freight. A fine vessel when acquired, Mr. Stephanidis has made her over into a modern floating palace and prides himself that the third class steerage accommodations provided are a veritable revelation in ocean travel. Daily concerts and motion pictures have been arranged for during the fifteen-day trip to the port of Piraeus; Constantinople will be made in seventeen days, and Constanza two days later. Several other palatial steamers are soon to be added to this service.

THE UNITED AMERICAN LINES

THE UNITED AMERICAN LINES, so far as name is concerned, is a new organization, having been incorporated in August, 1920. It represents, however, interests which have been known to the American shipping community for many years, and which have done much to build up the shipping prestige of the Port of New York.

The United American Lines is an operating company owned jointly by the American-Hawaiian Steamship Company and the American Ship and Commerce Navigation Corporation. The fleets of these two companies aggregate approximately 400,000 tons deadweight, which is the largest single operating unit of privately owned cargo and passenger tonnage under the American flag.

The American-Hawaiian Steamship Company was one of the pioneers in the development of the modern American merchant marine. For more than twenty years it has maintained services to the Pacific Coast and to Hawaii. During the war, and since, its vessels have been engaged in European trade also. The fleet now numbers twenty-eight cargo vessels.

The American Ship and Commerce Navigation Corporation, together with its subsidiary, The Shawmut Steamship Company, was a development of the war. The fleet embraces thirteen cargo vessels and three combination third-class passenger and cargo vessels. The latter are of a special type, and because they give third-class passengers conveniences hitherto unknown to that class of travel, they have been called "ships of democracy." One is a converted ex-German liner; the other two were designed and constructed by the Merchant Shipbuilding Corporation, of Chester, Pa., and are the first of their type built in America or operated under the American flag. They are operated between New York and Hamburg.

U. S. & A. LINES, Inc.— AN ALL AMERICAN COMPANY

THIS Company was organized on August 22, 1898, and has been in constant operation since that time, maintaining a service to Australian and New Zealand ports. Prior to the opening of the Panama Canal all steamers proceeded to Australia and New Zealand via the Cape of Good Hope; since the opening of the Panama Canal all traffic is directed through this waterway to New Zealand and Australia, steamers calling at frequent intervals at Suva, New Caledonia and Northern Queensland ports.

A service has also been maintained from New York to South and East African ports.

S. S. HANSA OF THE HAMBURG-AMERICAN LINE

The resumption of the company's transatlantic service was inaugurated with the arrival here of the Hansa, November 6th, 1921. For nearly seventy-five years the Sandy Hook Pilots have taken the palatial steamers of the Hamburg-American Line in and out of New York harbor and it is with much pleasure they witness the ships of their old friend once more gracing the waters of our port.

FURNESS, WITHY & CO., Ltd.

ALTHOUGH a British steamship company, Furness, Withy & Company, Ltd., is very closely identified with the development of the Port of New York as the greatest commercial harbor in the world. From the early eighties, when the ships of Christopher Furness & Company came to New York from West Hartlepool, England, their home port, until the present day when the organization, one of the greatest in the list of steamship organizations, sends its ships under the name of Furness, Withy & Company, Ltd., to all parts of the world, the Furness flag has been a familiar sight in all navigable tide waters of the globe.

The history of Furness, Withy & Company, Ltd., synchronizes very largely with the life of the late Lord Furness, known for a long period as Sir Christopher Furness. He was prominent in the affairs of the United Kingdom and sat for two terms, aggregating fourteen years, in the House of Commons. At an early age he began his career as a shipowner, under the style of Christopher Furness & Company, at West Hartlepool. He travelled extensively in Sweden and was an important factor in developing the shipping of that country. Owing to his ability and energy, his firm steadily expanded until, in 1891, it amalgamated with the shipbuilding firm of Edward Withy & Company, of West Hartlepool, under the present name of Furness, Withy & Company, Ltd.

At the time of the death of the late Lord Furness, which occurred in 1912, the firm had become one of the leading shipping companies of Great Britain and its services to the British government during the war received generous recognition. Today the fleet of Furness, Withy & Company comprises the enormous figure of 750,000 gross tons, covering 174 steamers either owned or controlled by the firm. Eighty vessels flying the Furness, Withy & Company house flag were torpedoed during the war.

From 1912 to 1914 the late Sir Stephen Furness was chairman of the company, succeeding Lord Furness. Upon Sir Stephen's death, in 1914, the present Lord Furness, son of the founder of the company, became its chairman but retired in 1919, when he was succeeded by the Vice Chairman, Sir Frederick W. Lewis, Bart.

Millions of tons of freight are annually taken in and out of the Port of New York by steamers of the Furness-Withy fleet. The acquisition by the company, in August, 1916, of the Prince Line, the Furness-Withy fleet of owned and controlled tonnage was brought up to 1,400,000 deadweight tons, the Prince Line adding 181,211 gross tons to the fleet total, while the acquisition of the remaining interest in the Johnstone Line brought about 100,000 gross tons more. Other absorptions by the company since the

war were 23,500 gross tons from Evan, Thomas, Radcliff & Company, in May, 1917, and the Glen Line (James Gardiner & Company), with 63,355 gross tons, in September of the same year. Later, in 1919, Furness, Withy & Company took over the New York-Bermuda service of the Quebec Steamship Company.

In addition to these lines Furness, Withy & Company, Ltd., owns, controls or has a considerable interest in Houlder Brothers & Company, Ltd.; the Houlder Line, Ltd.; Furness-Houlder Argentine Lines, Ltd.; The Empire Transport Company, Ltd.; the British Empire Steam Navigation Company, Ltd.; the British & Argentine Steam Navigation Company, Ltd.; the Gulf Line, Ltd.; the London-Welsh Shipping Company, Ltd.; the Manchester Liners, Ltd.; the Norfolk and North American Steamship Company, Ltd.; the Neptune Steam Navigation Company, Ltd.; the White Diamond Steamship Company, Ltd. (George Warren & Company, Ltd.); the Economic Marine Insurance Company, the Tilbury Coaling Company, the Compagnie Furness (France) and the Anglo-Eastern Shipping Company, Ltd. Furness, Withy & Company, Ltd., also has departments of its own which deal with chartering, insurance, ships' stores, sales and purchases, bunkering, etc.

A huge fleet is kept in service between practically all the Atlantic ports of the United States and Canada and all the principal ports of Great Britain. There are also services to Havre, France, the Levant, South Africa, South America, the Far East, etc.

In the United States and Canada, Furness, Withy & Company, Ltd., are the general agents of the Manchester Liners, Ltd., and the Lloyd Sabaudo Line, of Italy, for both its passenger and freight services; freight agents in New York of the Swedish-American Line, the Swedish-America-Mexico Line and the Transatlantic Steamship Company, all of Gothenburg, Sweden. They are also the general passenger and freight agents in New York of the Quebec Steamship Company.

The head office of Furness, Withy & Company, Ltd., was transferred, in 1917, to "Furness House," Billiter Street, London, E. C. 3. The company's offices in Great Britain, aside from its head office in London, are at Liverpool, Cardiff, Middlesbrough, Newcastle-on-Tyne, Leith and Glasgow. In the United States the main offices are in New York, in a building specially erected for the company and which, like the home office in London, is called Furness House. It is one of the handsomest structures of lower New York, architecturally, and its entrance and foyer are shown to visitors to New York from all over the United States, because of its beauty and rare artistry. Other offices of the company in the United States are

located in Boston, Philadelphia, Baltimore, Newport News and Norfolk.

The American offices are under the management of Mr. H. C. Blackiston, Director in the United States of Furness, Withy & Company, Ltd., with headquarters at Furness House, 34 to 38 Whitehall Street, New York. Offices of the company are also maintained in Montreal, Quebec, St. John, New Brunswick; Halifax, Nova Scotia, and St. Johns, Newfoundland. Furness, Withy & Company, Ltd., also have affiliated offices in Paris, France, and Alexandria, Egypt.

HENRY STEERS, Inc.

THE name of Steers has been solidly built into the historical structure of the Port of New York by many feats of accomplishment on the part of those who bear and have borne the name.

It was the grandfather and granduncle respectively of Henry Steers and J. Rich Steers of the present well-known firm of Henry Steers, Inc., No. 17 Battery Place, who built the famous yacht America, which, under the command of Captain Dick Brown, aided by Captain Comstock as mate (both Sandy Hook Pilots), won the International cup, now known as the America's cup, in 1851, off the Isle of Wight.

The old Steer's shipyard was located at the foot of 9th Street and the East River. Henry Steers, father of the present Henry Steers, received his early education as shipbuilder in this old yard. After acquiring a thorough knowledge of the business under the able guidance of his father, he established a shipbuilding plant of his own in 1860 at Greenpoint, Brooklyn, opposite 23rd Street, Manhattan, where he built a great many steamers and yachts, among them being ships for the Pacific Mail Fleet; the original Rhode Island and Massachusetts of the Fall River Line; and many other locally well known vessels. The sail pilot boat George Steers was one of the products of his yard, and a stauncher nor better sailer never cruised the waters off Sandy Hook.

The present firm of Henry Steers, Inc., was established in 1894 as contracting engineers. The business of the concern has grown steadily until it is now one of the foremost in the building of waterfront improvements in this country.

The old Greenpoint shipyard is still owned by the heirs of Henry Steers, although it has undergone vast improvements since the old shipbuilding days. It now has four large piers and warehouses and is known as the Steers Terminal Company.

CAPTAIN ROBERT DOLLAR

THE house flag of the Dollar Steamship Company is known in every one of the large ports touched by the waters of the Pacific and its founder, Captain Robert Dollar, is known to every big shipping man in the world as one of the outstanding figures in the development of America's foreign trade. To all he is known and dearly respected as the dean of Pacific Coast shipping men.

Although the Pacific is the main field of operations for the Dollar Steamship Company, Captain Dollar maintains offices in New York and is largely interested in many enterprises identified with the development of our port.

Born in a Scottish lumberyard, of very poor parents, Captain Dollar was brought by his father to Canada at an early age, as a motherless lad. Before receiving any schooling to speak of, he was hired out as chore boy in a distant, uncouth, uncivilized lumber camp in the frozen North. The life was hard, but it made a man of him. Before emerging from his 'teens he realized that he must acquire some education before he could hope to get on in the world. And he meant to get on. An unexpected visit by the manager found him practising writing and figuring on birch bark, the only "paper" available. This led to his being given all the bookkeeping of the camp—to be done after regular working hours, however, without extra pay.

After experience as a lumberjack and as a foreman, during which he had to boss an army of men, most of whom were as uncouth as their environment, young Dollar (having saved all his wages except the few dollars needed to keep him in rough clothing and to cover his precious few "incidentals") decided to start lumbering on his own account. He had mastered every phase of the business and was getting along well when—crash! The terrific panic caused by "Black Friday" on the New York Gold Exchange, in 1873, swept down half the business concerns on the continent—young Dollar's among them.

"Happy and lucky is the young man who fails when young," he was told by a veteran. Dollar did not grasp his wisdom then.

He again became a foreman, worked and saved until he paid off every dollar of his debt, and then began accumulating a fresh stock of capital, determined to fare better the next time he launched out. He delayed action until he felt sure he had garnered enough capital, and this time no panic occurred to bowl him off his feet. He early saw the possibilities of exporting lumber to Britain and opened up a large and profitable trade. As his ambitions—and his capital—expanded, he looked for fresh fields of enterprise, and concluded that

the greatest undeveloped market for timber in the whole world was China. To China he went, not once but twice, to analyze the whole situation. Then he moved to the Pacific forests.

He soon discovered, however, that it was one thing to prepare lumber for the market and another thing to find ships to transport it across the Pacific. Not only were vessels scarce, but the freight rates were ruinous. Why not, he figured, buy ships and do his own transporting?

His first tiny vessel paid for itself in the first year. He bought another and then another.

Today his steamships thread their way through every ocean, carrying not only lumber but all varieties of cargo, many of which are not only carried but bought and sold by him.

COLUMBUS MARINE CORPORATION

THE COLUMBUS MARINE CORPORATION is an American Company which has developed within the last few years.

The Company has every appearance of being very efficiently managed, has very strong backing, and has been successfully weathering through the depression of business which has so seriously affected many concerns.

The Columbus Marine Corporation is chartered under the laws of the State of Delaware and has established cargo shipments from Atlantic and Gulf Ports to Mediterranean and Adriatic Ports.

While the Company is apparently young, it has built up an extensive trade and represents no less than 18 steamship lines between Mediterranean and Adriatic Ports and North Atlantic and Gulf Ports.

Besides loading steamers on berth, they also charter steamers for tramp business to all ports of the world.

The active officers of the Company having a life-time experience in the steamship business and understanding this business thoroughly, explains the good results produced by this Company.

They are reputed to be worthy of the confidence their friends have in them, which is becoming stronger as time goes on.

DANIEL F. LEARY

DANIEL F. LEARY, of the D. F. Leary Co., steamship agents and brokers, located at 45 Pearl Street, while one of the younger men of the shipping world is also one of the most progressive. During the fourteen years of his activity in the shipping field he has handled many ships, as agent or broker, to and from all the leading ports of the world.

Starting with the general United States agency for the Norway Mexico Gulf Line, Ltd., he eventually undertook the agency for the Seeberg Steamship Line, Inc. Mr. Leary took a very active part in the successful handling of the vessels of these lines.

Subsequently, he and his associates became the United States and Canadian agents for Messrs. Brys & Gylsen and their affiliated companies, who operated tramp cargo steamers from United States ports to all ports of the world. Mr. Leary handled all the details of securing freights and cargoes for these steamers from different Atlantic Coast ports.

TOYO KISEN KAISHA

ONE of the noted events in the marine history of Japan was the organization of the Toyo Kisen Kaisha in July, 1896, by Mr. Soichiro Asano in conjunction with Mr. Y. Shibuzawa and other well known business men of Japan.

The initial capital of the company was yen 6,500,000, which has been increased as the business of the company expanded, until at the present time it is yen 32,500,000, of which yen 22,750,000 is paid up.

The company owns a fleet of nineteen modern passenger and freight vessels, aggregating a gross tonnage of 155,682 and operates fast lines of service between the Orient and all the principal ports on the west coast of North and South America, as well as a regular service between the Orient and New York, via the Panama Canal.

The main office of the company is in Yokohoma, Japan, with agencies and branch offices in all the large ports of the world. The New York Office is located at 165 Broadway.

THE MERRITT & CHAPMAN DERRICK & WRECKING CO., Inc.

THE history of this Company dates back to 1860, when Captain I. J. Merritt was engaged in the salvage business as representative of the Underwriters, and was practical head of the Coast Wrecking Company.

The Merritt Wrecking Organization was formed in 1880, and merged with the Chapman Derrick Company in 1897, forming the Merritt & Chapman Derrick & Wrecking Co., Inc., the largest concern of its kind in the world.

A fleet of sea-going salvage vessels, especially equipped with a complete assortment of modern salvage appliances and special tools, is maintained by the Company at various bases ready, at a moment's notice, to respond any hour of the day or night to calls from vessels stranded along the coasts, or otherwise in distress at sea. Prompt despatch being of vital importance, their office is open day and night. Each vessel carries in addition to its regular crew, a complement of skilled men known as the "Salvage Crew," consisting of Salvage Expert, Foremen, Engineers, Divers, Wreckers, Blacksmiths and Carpenters; all experts in applying their individual trades to the salvage business through years of experience—many of them having been in the Company's employ for upwards of thirty years.

The Merritt & Chapman service for the protection of shipping covers the U. S. Atlantic Coast from Newfoundland to Florida, as well as the waters of the West Indies, Caribbean Sea and Gulf of Mexico; and millions of dollars are saved yearly for shipowners and underwriters by this Company's operations.

Not only is this service important and valuable to shipowners and underwriters, but it is a benefit to the port of New York, as most of the vessels saved by this Company are brought to New York for delivery to the owners, and many of them are repaired and reconditioned in the shipyards here.

This Company also maintains a fleet of about thirty (30) large floating derricks, five (5) derrick propellers, also harbor tugs, most of which are located in the Port of New York. These derricks are capable of lifting from 75 to 250 tons, and the derricks Monarch and Colossus are the largest and most powerful of their kind in existence.

The main office of the Company is located in New York City at 17 Battery Place with branches at Norfolk, Va.; Philadelphia, Pa.; Baltimore, Md.; Key West, Fla., and Kingston, Jamaica, B. W. I.

THE NEW YORK GROUP OF MERRITT & CHAPMAN DIVERS

The largest group of skilled divers employed by any concern in the world.—From a photograph taken in November, 1921, aboard the derrick Monarch, the largest wrecking derrick in the world.

WHITLOCK CORDAGE COMPANY

IN THE year 1825, at Elizabethport, N. J., Sidney B. Whitlock founded the business which has since developed into the Whitlock Cordage Company, manufacturers of Manila and Sisal rope and twine. Thus it will be seen that for nearly a hundred years the Whitlock family has been making rope for sailors.

When the Elizabethport plant was destroyed by fire in the early nineties, a new company was formed by Mr. W. P. Whitlock. It was not until 1905, however, after the present modern plant had been completed at Jersey City, that his associates finally persuaded Mr. Whitlock that they had at last perfected the rope which he was willing to have marketed under his own name. He realized that, to succeed, such a brand must not only be as good as the very best of those with which it must compete, but also a little better.

The result is Whitlock Manila, a rope well known to sailormen, wherever American ships plow the seven seas.

The present up-to-date, thoroughly equipped factory in Jersey City has direct rail connection for receiving raw materials and shipping finished rope. The New York ferries are within easy reach, and local deliveries are speedily made by a fleet of motor trucks.

The impression a visitor receives of the Whitlock mill is one of cleanliness. He approaches the main group of buildings along walks bordered by lawns and flowers. With plenty of open space on all sides—a city park bounds the front of the property—there is a sense of fresh air and healthfulness about the place.

For the manufacture of Whitlock Manila rope, very high grade Manila Hemp is imported from the Philippines in bales averaging 275 pounds. The hemp is carefully selected, then passed through a series of machines which comb and straighten out the fibres. Next it goes through a similar process on a smaller scale which finally reduces it to a smooth stream of hemp called a "sliver," and is ready for spinning.

After the yarn is spun it is formed into the strands which make up all sizes of rope. Usually this rope is three-strand, but it may be four- or six-strand, according to the work to which it will be put aboard ship. Since larger rope must be easily handled for splicing, etc., the lay often needed is soft, but for regular marine use, medium or regular lay, three-strand, is considered best.

The Whitlock Company guarantees that Whitlock Manila Rope is superior in every respect to the U. S. Bureau of Standards Specifications, not only in strength, length per pound, and tare, but also in quality of fibre. And the necessity for a rope-user knowing

exactly what quality Manila fibre has been used in making the rope he buys cannot be overestimated, for good rope cannot be manufactured from poor Manila hemp—and there are over twenty grades of fibre which the rope manufacturer may choose.

When a sailorman trusts his life to a rope, he can afford to take no chances, and never willingly does so—which is partly the reason for the continued and ever-growing success of this able maker of Marine Cordage. Any reader of this book is cordially invited to visit the Whitlock Mill and there see for himself with what skill and care Whitlock Manila rope is built.

THE OSAKA SHOSEN KABUSHIKI KAISHA

(*Osaka Mercantile Steamship Co., Ltd.*)

THIS Company, equipped with a capital of Yen 100,000,000, and a fleet of over 468,000 tons gross, is now conducting about 50 regular services making important commercial highways of the world, the total length of which reaching more than 240,000 nautical miles. When the comparatively short period of the Company's existence is remembered and also its modest beginning, the progress it has made is marvellous. It was established in 1884 with a capital of only yen 1,200,000 and with a fleet of steamers having an aggregate tonnage of 17,000, the total miles covered by the lines of services was not more than 8,500, practically confined to the western half of the Empire. During the thirty-seven years that followed its establishment it has encountered many difficulties, but has, by pursuing a steady and progressive policy, overcome every obstacle, which is in itself an eloquent testimony to the remarkable development of the water-transport business in Japan.

During the thirty-seven years of its existence the company has steadily expanded its field of operations until at the present time it operates a fleet of one hundred and ninety-seven vessels with a total gross tonnage of 468,703. Fifty lines of service are operated to the ports of North and South Europe, the United States, India, Australia, South America, the South Seas and China.

The head office of the Company is in Osaka, Japan, with branches in all the principal parts of the world. The New York office is located in the Woolworth Building.

MITSUI & CO., Ltd.

MITSUI & CO., LTD. (Mitsui Bussan Kaisha, Ltd.) with an authorized capital of Y100,000,000, or approximately $50,000,000 was organized by Mitsui families in 1909, as the successor to the firm bearing the same name which was one of the pioneer concerns in Japan engaged in the export and import business and today it constitutes one of the three direct undertakings of the same family, the remaining two being the Mitsui Bank, Ltd., capitalized at Y100,000,000, or $50,000,000 and the Mitsui Mining Co., Ltd., with a capital of Y100,000,000 or $50,000,000.

The history of the Mitsui families dates back nearly three centuries when they established an exchange house, developing gradually into a private bank of considerable importance, and with the opening of Japan's doors to the world in the middle of the last century, they organized one of the first modern banks in Japan. Simultaneously the firm of Mitsui & Co. was organized to engage in general export and import business.

Today Mitsui & Co., Ltd., or Mitsui Bussan Kaisha, Ltd., as it is known in the Orient, is one of the most important business factors in the Far East, while its position is no less important in the United States and Europe. Its extensive business, in almost every kind of commodity, literally from a pin to a locomotive, is carried on throughout the world with more than 70 branch offices located at all large business centers of the globe.

It also conducts a shipping business, owning twenty-seven ocean-going and coastwise vessels, whose deadweight tonnage aggregates nearly 140,000 tons, besides numerous tugs, lighters, extensive wharves and warehouse accommodations at the principal ports in the Far East.

This company also established a shipbuilding yard in 1918 at Tama on the inland sea of Japan, between Kobe and Moji. The works cover an area of 293 acres, and are equipped with 4 building berths. There are also two dry docks, the larger one of which is 480 ft. long and 74 ft. wide, and is able to accommodate steamers of 15,000 deadweight tons. This yard is equipped with the most modern machinery for shipbuilding, and also for repairs of every description and engages in constructional, electrical and mechanical engineering. It also maintains one salvage boat at the shipbuilding yard, which is available in Far Eastern waters on shortest notice.

During the last war, two American Government steamers, S. S. Eastern Importer and Eastern Exporter, of 9,000 deadweight tons each, were constructed in this yard.

S. O. STRAY & COMPANY

THE firm of S. O. Stray & Company, Inc., was established in the year 1866 in the City of Christianssand S, Norway.

The business was started with the purchase of the Bark Veritas of about 390 tons net register, since when the company continued to add sailing ships to their fleet from year to year, until the company was known as one of the largest and strongest sailing ship owners in Norway. Their ships traded all over the world, and especially in the United States. They purchased their first steamer, the "Snorre" in 1904. In 1906 Mr. Emil Stray, grandson of Mr. Sven O. Stray, was taken into the business as a partner. Finally Mr. Emil Stray succeeded to the control of the company in 1912. By this time the company owned several steamers and a large fleet of sailing ships.

In 1917 the company foresaw the necessity of opening their own office in New York, and accordingly Mr. Karl Krogstad was sent here to start the company of S. O. Stray & Company, Inc., with Mr. Karl Krogstad as president and Mr. C. V. Thavenot as secretary and treasurer. The company was primarily started with the purpose of attending to the chartering of the company's large fleet of sailing ships and steamers in this market and also to act as general chartering agents for various Norwegian ship owners. The company was a success from the start and during the years following, up to the signing of the armistice, were the largest brokers in the chartering of foreign sailing ships.

In 1918 Mr. Emil Stray came from Norway as one of the members of the Norwegian Shipping Commission and was instrumental in making an agreement with the Shipping Board, known as the "Norwegian Agreement," for the chartering of the entire Norwegian sailing ship fleet to the United States Shipping Board. This agreement covered the South American, Australian and African trades, and this sailing ship fleet practically replaced the regular steam tonnage hitherto employed in these trades and which, on account of the war, had been withdrawn for war purposes. It can, therefore, be said that the Norwegian sailing ship fleet performed an invaluable service in carrying on the trade of this country during the dearth of steam tonnage from that time until the cessation of hostilities.

In 1919 the company started to require more steam tonnage to replace the sailing ship fleet which, by then, had been sadly depleted by German submarines, mines and other war fatalities. The S. O. Stray Steamship Corporation was organized in New York at the end of 1919 for the purpose of establishing a regular line service from New York to Norwegian ports, maintaining a regular semi-monthly service. This was eventually amplified, by combining with

other important Norwegian ship owners, by a service to other Scandinavian and Baltic ports and were one of the first, since the end of the war, to start a regular service to Petrograd. This line was successful from the start, and shortly after the company established another line from the Northern States to Brazil and the Argentine, and maintains a monthly service with several first class Diesel motor ships. In order to insure prompt and efficient service for their shippers, the company acquired a lease on Pier No. 4, Brooklyn, where they have their own organization for loading and discharging, receiving and delivering, etc. The present officers of the New York corporation are Mr. C. V. Thavenot, President; Mr. W. A. J. Kopp, Vice-President; Captain Christophersen, Secretary and Treasurer and Marine Superintendent.

The head office of S. O. Stray & Company A/S is still located in Christianssand S, Norway, with Mr. Emil Stray, Mr. T. Isaksen and Mr. Karl Krogstad as managing directors. The company also maintains offices in Christiana; Cardiff, Wales; Rio de Janeiro; Santos and Buenos Aires, also agents at all other ports of call.

WESSEL, DUVAL & CO.

THE business of Wessel, Duval & Co. dates back to 1828, when it was established by Augustus Hemenway, of Boston. The firm during that period has been exclusively engaged in American commerce—*i. e.*, shipping the products of this country to Bolivia, Chile and Peru (including Ecuador up to a few years ago) and bringing back the products of those countries, of which nitrate of soda from Chile is the preponderant commodity.

At the outset of its activities the firm conducted its business by its own fleet of sailing vessels, which it continued until sail was replaced by steam, and then, by reason of the prohibitive cost of operating steamers under the American flag in competition with foreign tonnage it had to choose between a foreign ship-owning department, affecting its distinctively American character, on the one hand, and relying on long-term time charters on the other, and chose the latter.

The West Coast Line, which it operates, is the oldest in the West Coast service, and modern vessels of about 8,000 tons are employed. The route is via the Panama Canal, and the itinerary includes all the important ports in Peru and Chile.

WILLIAM T. DONNELLY

W T. DONNELLY, consulting engineer and naval architect, 17 Battery Place, New York City, says that he came from the land and not from the sea, and that as a boy knew more about planting potatoes and hoeing corn than how to maneuver a boat in or out of water, but "a man drinketh that for which he thirsteth," and sooner or later, a man's calling follows his heart's desire.

Mr. Donnelly's technical education, if such it can be called, commenced in Cooper Union, and he makes the statement that it still continues in the broadest of all educational institutions, the work of the world.

Mr. Donnelly's first marine work of importance was the design for a 10,000 ton floating dry dock for Frederick C. Lang in 1898. This has been followed by many others, not only in and around New York but up and down the Pacific Coast to the far islands of the Pacific and in the Gulf of Mexico. Mr. Donnelly speaks with pride of the fact that he purchased and read with great interest the first copy of Marine Engineering, was a continuous subscriber to that publication and was invited by its owner and editor, W. L. Aldrich, to write the "Twenty Years Review."

During the late war, Mr. Donnelly served as a member of the Ship Protection Committee, a joint organization composed of members of the Shipping Board and the Naval Consulting Board. His most recent contribution to nautical affairs has been his electric propelled boats, the Dawn and New Era, which to date have sailed more than 6,000 miles up and down the Atlantic Coast.

NATIONAL STEAM NAVIGATION COMPANY, Ltd.

KNOWN as the National Greek Line is a corporation having been incorporated in 1907, starting with the steamship Patris, this concern later acquired the Macedonia, which was lost as an auxiliary cruiser during the Balkan War of 1912. After the loss of the Macedonia, the Themistocles and the Megali Hellas were acquired. To further increase the tonnage of this line the S. S. King Alexander, formerly the Cleveland of the Hamburg American Line and also the Constantinople, formerly the Bremen of the North German Lloyd, was chartered. This company also owns 12 steamers used in coastwise traffic in the Mediterranean together with several cargo boats. The United States offices of the company are located at No. 20 Pearl Street, New York City, the main office being at Athens, Greece. The company maintains a regular service from New York to Piraeus, Constantinople, Varna. (Bulgaria) and Constantza (Rumania). Also New York to Piraeus, Beyreuth and Alexandria.

ROYAL INSURANCE COMPANY, Ltd.

IN reviewing the birth of the Royal Insurance Company, Limited, in 1845, it is difficult to discover any definite information regarding the reasons which induced its founders to embark upon the enterprise, but the flourishing and prosperous condition of commerce at that time and the improvement in inter-communication by means of early railway construction and the foundation of the American lines which had been inaugurated by the departure of the pioneer steamship Britannia probably strongly influenced them.

The Company was provisionally registered March 11, 1845, with a capital of £2,000,000 in 100,000 shares of £20 each. The original application for shares greatly exceeded the capital requirements. Registration was completed June 13th, 1845, and on the 10th of the same month the Directors announced their readiness to receive insurance proposals.

Although the field of the Company's operations was extended cautiously and slowly, yet by 1851 many foreign agencies in all parts of the world had been established and early in that year the directors decided to extend to the United States, commencing with New York. The following year offices were opened in Philadelphia and Cincinnati and since that time further branch offices and agencies have been opened, until at the present time the Company is prepared to render service in practically any part of the United States.

Following common experience the Company was not free from vicissitudes and hardships, contributed to largely by the vast conflagrations which history has recorded. All losses, however, resulting from these disasters were promptly paid and through prudent management and building up of reserves there has never been a report issued to shareholders recommending the passing of a dividend.

In 1907 the Company's present New York quarters, the "Royal" building, 84 William Street, was opened. This change brought the Company on the very fringe of the insurance district at that time, but at this date William Street and Maiden Lane may be considered the heart of the district.

On January 1, 1911, a marine department was established under the management of Mr. John E. Hoffman, and under his direction the Company has amply shared in the nation's maritime prosperity. Directly associated with the "Royal" in the marine department are the Queen Insurance Company of America, the Newark Fire Insurance Company, the Star Insurance Company of America and the Maritime Insurance Company, Limited, of Liverpool.

In conclusion, the appropriateness of the Royal's motto, "Tutum te sistam" (literally, "I will place thee in safety") is demonstrated by the present position and resources of the Company.

STEAMSHIPS HERMAN FRASCH, J. R. GORDON, AND HENRY D. WHITON

Of the Union Sulphur Company's Fleet

ORE STEAMSHIP CORPORATION

ORE STEAMSHIP CORPORATION is a subsidiary company of Bethlehem Steel Company and was formed for the purpose of owning and operating steamers principally in the service of Bethlehem Steel Company and its asosciated and affiliated companies.

The first of its fleet was the Steamship Cubore, delivered in 1917, and followed by three other sister steamers of the same size, namely, about 11,600 tons total deadweight. These vessels are of special design for the ore and bulk cargo trade and so constructed as to require the minimum time in loading and discharging. A smaller steamer of about 6,100 tons deadweight, of the same construction, is also in service.

To meet the requirements for the carriage of iron ore from Chile to the Bethlehem plants, Ore Steamship Corporation now has under construction five of the largest vessels that will fly the American flag. Each of the five steamers is of more than 20,000 tons deadweight capacity and in addition to being able to transport iron ore the arrangements are such that they will also be able to carry their full deadweight capacity of bulk oil and other bulk cargoes. In 1922, the total deadweight capacity of the fleet will be over 160,000 tons.

In order to obtain the most modern facilities, Ore Steamship Corporation now has under erection at the Claremont Terminal of the Lehigh Valley Railroad, in New York harbor, one of the most modern bulk discharging plants on the Atlantic coast. This plant will have mechanical unloaders capable of discharging ore and other bulk cargoes at the rate of 1,500 tons per hour. It will be a valuable asset to the port of New York as by the economies it will effect it will divert a great deal of tonnage to New York that would otherwise go to other ports.

It is contemplated to build a number of additional steamers of 20,000 tons capacity for this Company. In the near future its fleet will be an important one to the American Merchant Marine and the business of the port of New York.

EXPORT STEAMSHIP CORPORATION

THE EXPORT STEAMSHIP CORPORATION was organized and incorporated under the laws of the State of New York in January, 1919.

The Corporation was organized for the purpose of acquiring and operating vessels under the United States flag for the development of the American Merchant Marine. The first vessels allocated by the U. S. Shipping Board to the Corporation were operated to United Kingdom, Scandinavian, Greek, Turkish and Black Sea ports. Later additional Levant ports were added to the service, and during the past year the officers of the Corporation have devoted themselves almost exclusively to the trade with the Near East.

The efficient operation of the Corporation has been recognized by the Shipping Board, being recently designated as the exclusive operator of Shipping Board vessels to Greek and Levant ports and having its scope of operation extended to include ports on the Egyptian, Syrian and Palestine coasts.

No effort has been spared to convince exporters that their merchandise can be shipped as expeditiously in vessels operated by the Corporation as by foreign companies which were favored with the greater part of this business prior to the signing of the Armistice. The result of the earnest endeavors of the Corporation in this direction has been very gratifying. Exporters have recognized the efforts of the Corporation to such an extent that its vessels have been carrying full cargoes of general merchandise for some time to Greek, Levant and Turkish ports, and among the exporters who have favored it with their business are the most prominent and old established in the trade.

Regular sailings, efficient operation, constituting service to its clients, has been the constant aim of the Corporation, and there is every reason to believe that a continuance of the present policy will eventually secure for it even larger patronage than it enjoys at present.

The carriage of American goods in American bottoms, operated by Americans, is the objective of the Corporation, and with the cooperation of American exporters the attainment of the objective is assured.

THREE STAR LINE

THE SOCIETE LES AFFRETEURS REUNIS, known in the United States under the name, "Three Star Line," was organized in 1895, with two steamers, and engaged in the coastwise trade between Algeria and the northern ports of France.

At the beginning many obstacles were encountered, but, due to the activity and the energy displayed by its young Director, Mr. Jean Stern, the numerous difficulties were overcome little by little, and the three-star green flag soon took a place more and more important in European maritime traffic.

Mr. Stern's object was to improve the commercial relations between France, its colonies of North Africa and foreign countries—create new markets, etc.

When the war broke out the fleet of the Affréteurs Réunis amounted to 48,000 d. w. tons, but, due to the submarine war, suffered greatly and at the time of the Armistice it was reduced to 15,000 tons. But the man at the head of the Affréteurs Réunis feared no obstacles and in 1921 the fleet aggregated 45 ships, of a total d. w. tonnage of 150,000 tons, ranking fourth in importance among the great French steamship companies.

Gradually Mr. Stern extended the scope of his operations, and, convinced of the development of commercial trade with the United States, during the spring of 1919 he inaugurated a freight service between New York and the Western Mediterranean.

This new service rapidly became very popular among the big importers of North Africa, and at their request the sailing, which, at the beginning, took place every six weeks were consistently augmented. The new service, maintained with six steamers of the most modern type, now includes all the important ports of the Western Mediterranean, and sailings take place regularly every 15 days from New York and Philadelphia.

It is interesting to note that, at a time when all the nations are trying to protect their merchant flag by direct or indirect subsidies, Mr. Stern is decidedly adverse to any aid from the government, even for passenger boats, and has proved it lately by organizing, without help or subsidy, a regular service of passenger steamers between France, North Africa and Senegal, which is very popular.

THE EAST ASIATIC COMPANY, Inc.

THIS company is the United States representative of The East Asiatic Company, Limited, of Copenhagen, Denmark, the pioneers in the field of oceangoing motorships. The first time the New Yorkers had an opportunity to view one of these motorships was in 1914, when the port of New York was visited by the M. S. "Siam," but since then motorships have not been an usual sight in the North and East Rivers; in fact were quite common at one time. In spite of this, however, they are usually able to rouse the interest of onlookers on account of their appearance, which deviates from that of steamships generally by the missing smokestack. There are those who are predicting that the motorship is going to be the dominating type on the seas in years to come, and judging from the increase in tonnage of this class of ships during the past few years, they may perhaps not be altogether wrong.

Besides their large fleet of motorships which is employed in various trades, taking them all over the globe, The East Asiatic Company, Limited, also operates a regular line of passenger steamers; the Baltic American Line from New York to the Baltic, Danzig and Libau being their ports of call.

Of other regular lines of The East Asiatic Company, Ltd., one is between Los Angeles, San Francisco, Seattle and other Pacific Coast ports and European ports terminating at Copenhagen and one between European ports and Cuba, Mexico, Galveston and New Orleans and vice versa.

I. F. C. LINES

THE INTERNATIONAL FREIGHTING CORPORATION organized under the laws of the State of Delaware in 1916 with H. J. Lesser, President; J. H. Graves, Vice-President; Irving L. Ernst, Treasurer, and T. J. McManus, Secretary, has met with the success conspicuous among the managers and operators of American tonnage. This company started its business with the operation of a line of steamers from Philadelphia to the East Coast of South America and subsequently extended its services to cover a line from Philadelphia to the French Atlantic ports and from the River Plate to United Kingdom ports. Recently it has further extended its services to the East Coast of South America, operating out of Boston, New York, Philadelphia, Baltimore, Savannah, Charleston and Jacksonville. The company's main office is at 44 Whitehall Street, New York City.

COMPANIA TRASATLANTICA

(*Spanish Royal Mail Line*)

THE enterprise "A. Lopez & Co." was founded in Alicante, Spain, in the year 1856, establishing a regular service between Alicante and Marseilles (France) with the steamers "Alicante," "Madrid" and "Marsella." It also established a service across the ocean with the steamers "Ciudad Condal" and "Paris."

On the 10th of September, 1867, the mail contract was obtained between Spain and Santo Domingo, Porto Rico and Cuba, which service was established with the steamers "Ciudad Condal" and "Paris," acquiring in that same year, six more vessels named "Canarias," "Cantabria," "Espana," "Isla de Cuba," "Puerto Rico" and "Canto Domingo," said service being inaugurated with the mentioned steamers the early part of 1868.

In the year 1877 this service was extended to Central America, with the addition of four more steamers.

In 1881, this enterprise was transformed into a corporation under the name of "Compañia Trasatlántica" de Barcelona.

In 1884 a new line was established plying between Spain and the Philippine Islands and in that year there were purchased eleven more steamers, to wit, "A. Lopez," "Cataluña," "Ciudad de Santander," "San Francisco," "San Augustin," "San Ignacio de Loyola," "Vizcaya," "Panamá," "Mendez Núñez," "Mexico" and "Habana."

In 1886, a mail service was organized, comprising regular lines to the United States, Venezuela, Colombia, Argentine, Fernando Poo and Morocco and on the 28th of June, 1887, contract was closed with the acquirement of the steamers "Isla de Panay," "Isla de Luzón," "Isla de Cebú," and "Isla de Mindanao."

In 1913 there were built the steamers "Reina Victoria Eugenia" and "Infanta Isabel de Borbón" of 15,400 tons displacement each. The Company has now under construction and almost completed the new steamers "Alfonso XIII," "Cristobal Colón" and "Manuel Arnús." The first two are 16,000 tons each and the last one of 12,000 tons.

The Company owns and operates twenty-one vessels, all of which are both passenger and freight carriers, sailing from the ports of Spain to the U. S., Uraguay, Argentine, Cuba, Mexico, Porto Rico, Panama, Colombia and the Philippine Islands.

The New York office of the company is at Pier 8, East River, which was built by them in 1907.

THE AMERICAN EXPRESS COMPANY

WHEN we make use of some modern convenience we are apt to lose sight of the romance of the development of that convenience. For there is romance in business and the stories of the development and growth in the United States of the railroads, the telephone, the telegraph and other great media of progress are as thrilling and as interesting as any other phase of our national life.

So it is with the express business. The efficiency of this business, with its 135,000 persons employed in its various branches and its handling of approximately 1,000,000 shipments a day, is pretty much taken for granted. But this huge business developed out of an idea formulated way back in 1839. It was developed step by step through the various periods of American industrial progress, passing through without any serious difficulty many periods of depression and panic, and finally developing into one great Company that reaches every hamlet and city in the United States.

It is curious and noteworthy in looking backward to learn how this service of transporting packages from one point to another lead gradually into demands by the public for the extension of that service along financial lines, so that finally one Company, at least —the American Express Company—became a great financial institution and was able to continue its existence as a profitable and growing institution, even after turning over its main business of transportation to the American Railway Express Company—the single Express transportation agency in the United States at the present time.

Transportation of packages, while at first only handled between points within the United States, soon developed into an international business and this in turn resulted in the American Express Company becoming an international financial institution. As the Express business necessitated the establishment of offices or agencies in the more important foreign centers, travelers looked to the American Express Company for some means of taking care of their funds so that they might be delivered to them safely at one point or another in their journeys. From these requests and demands grew the development of the Travelers Cheques, which have since become known in every portion of the world, and which are accepted and cashed at sight, even where other forms of currency may be questioned. The demand for Travelers' Cheques grew so rapidly that it necessitated the establishment by the American Express Company of thousands of banking connections in all parts of the world, and these connec-

tions today are one of the important assets of the Company because they provide a service to the Company's customers that is unparalleled.

The services of the Company to the traveler, in a financial sense, became so important that there grew up a demand for the Company to take charge of travelers' entire problems and this necessitated the establishment of the Travel Department, in order to supply steamship, railroad and hotel and other accommodations.

The Foreign Trade Department of the Company was also established because of the requests of customers of the Company for information regarding exports and imports and the opportunities for the extension of foreign trade by importers and exporters not only in the United States, but in other countries.

Thus the development of this great Company has been brought about as a result of the original idea of one man who offered to carry valuable packages, at express speed, from one city to another a little over eighty years ago. Except for the transportation of packages from one country to another, this part of the business has been turned over to one Company—the American Railway Express Company—whose sole business is that of transportation. But the various financial functions that have developed out of this original idea are being carried on by the American Express Company, which is now solely a financial institution and one of the most important in the international business world.

THE ROOSEVELT STEAMSHIP CO.

THE ROOSEVELT STEAMSHIP COMPANY was incorporated during the year 1921 under the laws of the State of Delaware for the purpose of engaging in commerce and navigation. The titular head of this company is Captain Kermit Roosevelt, second son of the illustrious Theodore Roosevelt and Mrs. Edith Kermit Carew Roosevelt. In the days of the American clippers the Carews were strongly intrenched in trade and commerce and were pioneers in the upbuilding of American trade with foreign lands. Mr. Roosevelt's plans for developing an American organization to push forward American interests throughout the world are well known and his host of friends wish him every success in the ultimate accomplishment of them. The company is now operating from a modest office at 44 Beaver Street.

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